

GOVERNMENT OF INDIA
DEPARTMENT OF AGRICULTURE



PROCEEDINGS
OF THE
1st Senior Forest Officers' Conference
held at Dehra Dun from 5th to 7th April
1945

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1945

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(ii)

EXTRACT FROM LETTER NO. F.13-31(4)|43-F&L, DATED THE 27TH APRIL, 1913, FROM THE UNDER SECRETARY TO THE GOVERNMENT OF INDIA, DEPARTMENT OF EDUCATION, HEALTH AND LANDS, SIMLA, TO ALL PROVINCIAL GOVTS.

Board of Forestry, 1912. Recommendations (a) proposed creation of a forest sinking fund for post-war reconstruction and (b) Establishment of a Senior Forest Officers' Conference to be held annually.

(b) *Senior Forest Officers' Conference.*—The Board endorsed the suggestion that in addition to the Board of Forestry, which would normally meet triennially there should be a conference of Senior Forest officers on the analogy of the Central Board of Irrigation to meet annually, if possible, to discuss technical subjects.

EXTRACT FROM LETTER NO. F.13-31|43-F&L, DATED THE 3RD MAY, 1944, FROM THE ASSISTANT SECRETARY TO THE GOVT. OF INDIA, DEPTT. OF EDUCATION, HEALTH AND LANDS, NEW DELHI TO ALL PROVINCIAL GOVTS.

Board of Forestry, 1942—Recommendations—Establishment of a Senior Forest Officers Conference to be held annually.

I am directed to refer to the correspondence ending with your letter No.

14605 D.F|19|22-T.D., dated the 30th May 1913 (N.W.F.P.).
K-1936-24-31-H(b), dated the 6th June, 1913 (Sind).
4062-D|24, dated the 19th October 1913 (Bombay).
8550-C|43-2, dated the 23rd May, 1913 (Madras).
17605-E, dated the 9th December 1913 (Orissa).
12810-For., dated the 24th September, 1913 (Bengal).
G.R. 24|43|8, dated the 23rd June 1913 (Assam).
427-J|11|F-130, dated the 28th August 1913 (Bihar).
651-582-XI, dated the 29th June 1913 (C.P. & Berar).
429-AF|XIV-35AF|1912, dated the 17th July 1913 (U.P.).
2750-Ft (S), dated the 5th October 1913 (Punjab).

and to say that as all the Provincial Governments, except one, have expressed themselves in favour of the second proposal mentioned in paragraph 2 of this Department letter No. F.13-31(4)|43-F&L, dated the 27th April 1913, the Government of India have decided to accept the recommendation of the Board of Forestry to hold a Senior Forest Officers' Conference annually which will, broadly speaking, discuss such matters as those connected with the organisation, administration and management of the forests and the forest services of India. This body will, as stated in this Department letter referred to, have a purely technical composition. For the present it is proposed to confine the conference to a single representative from each province.

2. The question of the date and the venue of the first meeting of this conference is under consideration and a further communication will be sent to the Provincial Government in due course.

iii)

No. F.22-2(3)44-F&L.

GOVERNMENT OF INDIA.
DEPARTMENT OF EDUCATION, HEALTH AND LANDS.

Simla, the 16th November, 1944.

FROM

G. C. Sen Esquire, M.A.,

Deputy Secretary to the Government of India,

TO

All Provincial Governments.

Senior Forest Officers' Conference—Meetings.

SIR,

I am directed to refer to this Department letter No. F. 13-31-43L & L
(the correspondence ending with your letter
dated the 3rd May 1944
No. 27091-C/44-3, dated the 12 June 1944) and to say that the Government of India have decided to hold the first meeting of the Senior Forest Officers' Conference at Dehra Dun from the 5th to the 7th April, 1945 immediately after the Silvicultural Conference, arrangements regarding which are being made direct by the Silviculturist, Forest Research Institute, Dehra Dun, with the Provincial Silviculturists. As it is very difficult just at present to arrange accommodation at Dehra Dun for a large number of officers, the Government of India consider it desirable that not more than one officer should be nominated from each province for this Conference.

2. I am to forward for the information of the Provincial Government a copy of the agenda for the Senior Forest Officers' Conference and to request the Provincial Government to allow the officer nominated
to agree to deputise an officer)
be them to attend the Conference on the dates mentioned above and participating in the) ask him to furnish direct to the President, Forest Research Institute, Dehra Dun, any additional item or items for inclusion in the agenda of the Conference.

I have the honour to be
Sir,

(To Government of Madras.)

Your most obedient servant,
Sd. N. HASAN.

for Deputy Secretary.

No. F.22-2(3)44-F&L.

Copy, with a copy of the enclosure, forwarded for information to the Inspector General of Forests with reference to his letter No. 254/C dated the 23rd September, 1944.

By order,
Sd. N. HASAN,
Assistant Secretary.

**PROGRAMME OF 1ST SENIOR FOREST OFFICERS'
CONFERENCE, 1945.**

Thursday, April 5th.

Morning 10 A.M. to 1 P.M. *Item 3.*—Exposition and discussion of post-war forest plans.

Afternoon 2 P.M. to 5 P.M. *Item 4.*—Staff to carry out post-war forest plans and their training.

Item 2.—Exposition and discussion of effects of war on (a) Silviculture and (b) working plans and management.

Friday, April 6th.

Morning 10 A.M. to 1 P.M. *Item 9.*—Legislation necessary for the control of private forests.

Afternoon 2 P.M. to 5 P.M. *Item 5.*—Minimum educational qualifications prescribed for the Ranger and the Superior Forest Service Courses.

Item 8.—To consider the possibilities of providing a graduated course from the Forest College.

Saturday, April 7th.

Morning 10 A.M. to 1 P.M. *Item 6.*—The creation of a central Federal Forest Service.

Item 7.—Application of the next below rule to all forest officers, seconded to Dehra Dun.

Afternoon 2 P.M. to 5 P.M. *Item 1.*—Discussion on resolutions of the Silvicultural Conference.

Item 10.—Grant of premia to forest subordinates doing extra war supply work.

Final approval of resolutions.

AGENDA FOR THE SENIOR FOREST OFFICERS' CONFERENCE

1. Discussion on resolutions of the Silvicultural Conference.
2. Exposition and discussion of effects of war on (a) silviculture and (b) working plans and management.
3. Exposition and discussion of post-war forest plans.
4. Staff to carry out post-war forest plans and their training.
5. Minimum educational qualifications prescribed for the Ranger and the Superior Forest Service Courses.
6. The creation of a Central Federal Forest Service.
7. Application of the next below rule to all forest officers seconded to Dehra Dun.
8. To consider the possibilities of providing a graduated course from the Forest School to the Indian Forest College.
9. Legislation necessary for the control of private forests.
10. Grant of premia to forest subordinates doing extra war supply work.

PROCEEDINGS OF THE 1ST SENIOR FOREST OFFICERS' CONFERENCE, HELD AT DEHRA DUN FROM 5TH TO 7TH APRIL 1945.

The following officers attended the Conference —

Mr. A. P. F. Hamilton, O.B.E., M.C., I.F.S., Inspector General of Forests to the Govt. of India. (Chairman).

Mr. W. T. Hall, C.I.E., I.F.S., Chief Conservator of Forests, United Provinces.

Mr. H. S. George, C.I.E., I.F.S., Chief Conservator of Forests, Central Provinces.

Mr. G. R. Henniker-Gotley, C.I.E., D.S.O., I.F.S., Chief Conservator of Forests, Punjab.

Mr. T. M. Coffey, I.F.S., Chief Conservator of Forests, Bengal.

Mr. J. W. Nicholson, C.I.E., I.F.S., Conservator of Forests, Orissa.

Mr. W. C. de C. Walsh, I.F.S., Chief Conservator of Forests, Bombay.

Mr. L. R. Sabharwal, I.F.S., Conservator of Forests, Bihar.

Mr. R. N. De, I.F.S., Conservator of Forests, Assam.

Mr. N. G. Pring, I.F.S., Conservator of Forests, N.W.F. Province.

Mr. H. P. W. Davis, I.F.S., Conservator of Forests, Sind.

Mr. J. M. Sweet, I.F.S., Conservator of Forests, Madras.

Mr. C. E. Simmons, President, Forest Research Institute & Colleges, Dehra Dun.

Mr. C. M. Kushalappa, Chief Forest Officer, Coorg.

The Chairman in welcoming the members, said that the Conference was the outcome of the 1942 meeting of the Board of Forestry which had recommended that a conference of senior forest officers, which would be free from non-technical bias, would be likely to further the interests of forestry. He emphasised the importance of this conference because it was the first and because it was taking place at a time when great plans for the development of India's forests were being prepared. There was much business to be discussed in a short time and he did not propose to make a long opening speech.

Continuing, he said that it would not be possible to adhere to the programme, and items would be taken up as time permitted. Mr. Hall had represented that item 1 required scrutiny before discussion and it would therefore be held over until the last day. Since item 2 had also been fully discussed and resolutions thereon framed by the Silvicultural Conference, of which most of the members were also present in this conference, he proposed to start with Item No. 3.—*Exposition and discussion of post-war forest plans.*

The Chairman thought the debate should follow two lines, first to try and reach some degree of unity in policy and planning, and second to find out what support members required for proposals already submitted to their Governments so that recommendations could be framed.

accordingly. All Provinces except Sind, Central Provinces and N.W.F. Province had sent in notes about their plans and these would be taken as read. He suggested that as plans covered such a diversity of subjects, it would be best to group them under three heads for purposes of discussion :—

first, rehabilitation and development of forest already under the control of the Forest Department; this would include working plans, regeneration of felled areas, establishment of special plantations, e.g., *cinchona*, communications, housing and health, including anti-malarial measures, amenities for staff and labour, training of lower subordinate forest staff, utilisation and markets, etc.;

second, schemes mainly concerned with land development and utilisation, development committees, soil conservation, production of firewood in rural areas, build-up of new circles and divisions;

third, management of forests not at present under the Forest Department, extension of reservation, provision of a minimum percentage of forest land, revision of Forest Settlements.

During discussion the Chairman explained that the training of gazetted officers and Forest Rangers would be taken up in another item of the agenda. He said that he would also suggest additional subjects such as publicity, provision of mechanical equipment and the allocation of funds.

The Chairman then called for discussion on the various subjects.

Mr. Hall.—With regard to the items included under the Chairman's first head, the U.P. Forest Department had submitted the following schemes to the Post-war Reconstruction Board :—

- (1) Forest Rehabilitation (Working Plans).
- (2) Utilisation.
- (3) Forest Buildings and wells.
- (4) Communications.

With regard to (1) they already had a working plans circle with a Conservator in charge and they proposed to appoint an additional Conservator, Working Plans. Complete revision of all working plans would be undertaken in 10 years and interim schemes including recalculation of the yield would be prepared during the first two or three years after the war.

With regard to (2), they already had a Utilisation Circle dealing with timber supplies to the Defence Department and they proposed to retain it, particularly for the development of minor forest products. With regard to education, they proposed to restart the Foresters Training Class under a Gazetted Officer.

Mr. George said in the Central Provinces they had a rough scheme costing about Rs. 5 lakhs. A working plans circle was necessary and it was clear that they could not put the working plans in order with the short staff at their disposal, but working plans must have first priority. In addition they had funds for more extensive plantations during the next 5 years. New roads were required and they had ordered

steam-rollers. Fund had been given for quarters for subordinates. An important point was to train more foresters and forest guards, and this they proposed to do in two six-month courses of 15 men at a time. But it was essential that their pay should go up. At present guards got from Rs. 13 to Rs. 16 p.m. which was ridiculous. They must be suitably paid, and their pay should at least be on a par with that of Police Constables. If Forest Guards were generously treated, better relations might be expected between the Forest Department and the general public. As regards health measures, they had asked for a certain number of stationary dispensaries, and they had at present motor lorries fitted up as travelling dispensaries. By the provision of more dispensaries, staff would get better medical attention in future. Forest villages were under the control of Forest Department.

Mr. Pring.—Post-war plans for the N.W.F. Province included an increase in staff of more than 100 per cent. Instead of one Circle with five divisions, there would be two circles with ten divisions. All this necessitated a school for forest subordinates; the Punjab Forest School could no longer give enough seats. The chief difficulties at present were :—

- (a) acute shortage of staff, particularly of gazetted staff and rangers,
- (b) the fact that all working plans are due for revision.
- (c) the fact that subordinate staff would in future have to be recruited mainly from Pushto speaking areas west of the Indus.

It was proposed to ask for a post of Silviculturist, and a second Conservator, whose duties would include the supervision of working plan revision and the training of subordinate staff. The training of subordinate staff was of first importance.

Mr. Goffey said that in the Punjab all schemes depended finally on the availability of trained lower subordinates, Deputy Rangers and Foresters, and that he thought that training for at least 60 a year would have to be provided for. He added that in the Punjab selected Forest Guards were also trained in the School. He also added that in the Punjab a large number of working plans were due for revision and that the revival of the Working Plans and Utilisation Circle had been proposed to Government.

The Chairman suggested that it was desirable to fix a training target, all foresters should be school trained within 5 years of appointment. It was desirable that they should have some practical experience in the forest before going to the school.

Mr. Sweet said that they would be obliged after the war to employ members of ex-soldiers without training.

The Chairman considered that such men must be given forest training and to this all agreed.

Mr. Sabharwal said his province was interested in the development of Minor Forest Products and that they had sanctioned a post of Economic Botanist.

Mr. Coffey asked for opinions as to how best to develop Minor Forest Products.

Mr. Hall suggested that the obvious way was to form a Utilisation Circle.

The Chairman referred to Kashmir State where valuable work on Minor Forest Products had been done; it was the normal work of a Utilisation Circle; the Forest Research Institute was always ready to advise and assist.

The Chairman said that the forest rehabilitation plans did not differ much from province to province. It was agreed by all that the revision of working plans held the highest priority and that the provision of schools to train subordinates, where they did not already exist, was essential. Obviously the forests must be restored to their maximum yield capacity as soon as possible, but in the meantime it would be necessary, as had been proposed in the United Provinces, to calculate in-ter in yields wherever necessary. The second group of subjects would now be discussed.

Mr. George introducing the subject of expansion of the Forest Department to meet post-war schemes said that in the C.P. rehabilitation alone involved a great increase of work; he was proposing to form 3 new territorial divisions in order to make existing divisions more manageable. He considered that rehabilitation schemes should be given preference, as regards expansion and staff, over new development such as soil conservation.

Mr. Nicholson thought that no division should be larger than one gazetted officer could control.

The Chairman said that the notes submitted showed that the Provinces were systematically planning to build up the department to deal with the increased work due to rehabilitation and the urgent needs of soil conservation; it was, however, important to avoid forming new units before trained staff was available, and expansion should take place according to a definite plan.

Mr. Hall then said that he would like to hear what other provinces were doing about Provincial Forest Committees.

Mr. Sweet said that in Madras there was a Forest Sub-committee of the Planning Department.

Mr. Walsh said that in Bombay they had a Land Reconstruction Department.

The Chairman remarked that two kinds of committee could be formed, a Permanent Forest Policy Committee, or a Forest Planning Committee, set up to deal with post-war plans. (Here Mr. Hall interjected that, he referred to the latter; he did not think a Policy Committee was desirable at present). He agreed with Mr. Hall as regards the Policy Committee. He thought that if Provinces created Land Utilisation Boards as was being proposed by the Centre, Forest sub-committees might be necessary. In the Punjab there was a Post-war Planning Department but he did not know what its functions would be when the time came to execute the plans.

After discussion it was agreed that some sort of organisation would be necessary to direct large-scale plans involving proper land utilisation.

and soil conservation activities but that no specific recommendation could be made at present.

The Chairman next dealt with erosion surveys. He referred to the Uhl River Hydro-electric scheme in the Punjab where no erosion of water conservation survey of the catchment area had been made when the scheme was planned and how belated action to increase the discharge by improvement of the catchment was now being undertaken. He considered that the Forest Department should take its part in all planning for regional development and in particular where such plans involved the utilisation and improvement of waterways, for such purposes as irrigation, power and navigation. He mentioned the Damodar Valley Scheme, the Son Valley Project and the Punjab Reservoir Schemes.

Mr. Sahbaniwal said he was a member of the committee which prepared the Damodar Scheme. He described the scheme and said that the original idea was prevention of floods but that power and other lines of development were also contemplated now. Forest planning had been undertaken by him in connection with the scheme.

Mr. George said that as far as the Central Provinces were concerned the first he had heard of the Son Valley project was what he had seen in the newspapers.

The Conference agreed that the Forest Department should be associated with all such schemes from the beginning. As regards a general erosion survey of the whole country, the Chairman said that Policy Committee No. 5 of the Central Post-war Planning Committee had proposed the appointment of a Central Erosion Officer and suggested that this matter might wait until his appointment.

The Chairman then took up together the questions of surveying and utilising waste lands and of increasing the total percentage of land under forest. He thought that all crown waste not required for any other public purpose should be developed by afforestations, and that railway, canal and even roadside strips should be included and that schemes for the proper management of such lands should be prepared: in our forests, which included village forests, came in here. The question of Governments assuming powers to compel the afforestation of privately-owned waste would be discussed under Item 9 of the Agenda.

Mr. Hall said that he had already appointed a Conservator to classify waste lands.

Mr. Davis remarked that in Sind the proposal would include the taking over of lands between irrigation bounds.

Mr. Coffey wanted land settlements to follow land surveys.

The Chairman said that land utilisation surveys were a large and complicated problem involving the close collaboration of several departments; it was obvious that the Forest Department would have to be represented on them; he knew that in the Punjab land surveys connected with the "Grow More Food" campaign had been started by the Revenue Department in a number of districts and he hoped that the Forest Department would be associated with them. He felt that opinion as to what was required in the different provinces was not clear enough

yet to frame a resolution which would be of much use. The matter might be further considered at the next Conference.

Mr. Sabharwal said that more staff would be required and that Land Utilisation Boards would be concerned.

The Chairman then enquired whether the Conference endorsed the recommendation of the Government of India Policy Committee No. 5, Post-war Reconstruction Committee, that a minimum of percentage of the land should be under forest. He suggested that owing to 'unusual conditions' such as the large irrigation colonies in the Punjab, it might not be feasible to fix a minimum figure in all cases.

Mr. George said that in the Central Provinces the area of forest was over 40 per cent. here it was more a question of maldistribution; there were areas of high population where the forest was insufficient.

After some discussion it was agreed that the area of forest ought, as a general principle, to be sufficient for the requirements of the country and that a minimum area of 20 per cent., properly distributed, should be the aim of all administrations.

The Chairman then took up the question of forest settlement revisions and extension of reservation. He said that there were large areas of forest, particularly in the Western Himalayas, where protected and unclassified forest under old forest settlements were being slowly destroyed owing either to faulty settlement rules or to the excessive exercise of rights resulting from rising population.

Mr. Hall stated that when there was a Congress Government in the United Provinces, the Prime Minister in his Budget speech in the Council said he saw no reason why forest settlements should not be subject to revision. His object was to increase rights in reserved forests, not to reduce them. For the Conference to recommend revision of forest settlements was dangerous. He thought that where protected forest existed, steps should be taken to secure permanent settlement when it was considered necessary that permanent reservation was required.

The Chairman said that from the notes submitted, it appeared that extension of reservation was required in Bengal, Assam, Bihar, Orissa, Madras and Bombay; he hoped that the Provincial Governments would accept this policy.

He referred to the question of planning and asked whether it was fully realised outside the Department that in forestry long-term planning was essential, in addition to short term planning.

Mr. Hall said there was nothing to prevent putting up long term schemes but his Government was only concerned, at present with the finance of its capital outlay and the recurring expenditure over the first five years.

The Chairman agreed that 5 year plans had been asked for in the first instance, but in many cases these plans were only the beginning of development. In the Madras note several schemes were described as mainly "social service" schemes, and in other provinces such schemes had been proposed. In the past the Forest Departments had been

looked upon as quasi-commercial, in the future they must be identified far more with "social service" and their activities should not be judged by their profit and loss accounts. The finances of this part of their work should be kept separate from the usual forest activities. He asked the Conference to decide whether a resolution to this effect should be framed.

Mr. Sabharwal considered the Forest Department should not be considered a commercial department.

Mr. Hall pointed out that at the last meeting of the Board of Forestry this very matter was discussed and a resolution passed to the effect that out of the large surplus during the period of the war a Forest Sinking Fund should be formed to provide funds for forest reconstruction in the lean years which will follow the war; this, he thought, was sufficient.

Mr. Golley also thought no action was necessary in view of the Board of Forestry's resolution. The subject was then dropped.

The Chairman warned the conference that there might be difficulty in obtaining mechanical equipment for the execution of post-war plans, though the Army might be expected to help.

Mr. Nicholson enquired whether it was advisable to indent for machinery as part of post-war plans.

The Chairman said that this was the best course and it had been followed in the case of the Punjab. He did not think it necessary to frame any resolution.

The Chairman took up the last subject, publicity and propaganda; he said that with the exception of the Punjab this matter had not been dealt with in any of the Forest plans. He drew attention to the valuable results of forest propaganda in Bombay and the Punjab where special forest staff was employed for the purpose.

Mr. Coffey said in some provinces there was a separate department for publicity work.

The Chairman said it was his experience that forest propaganda could be satisfactorily presented to the public only by forest officers.

Mr. Hall said that publicity and propaganda would be necessary for post-war schemes and that provincial Governments should be asked to consider the appointment of forest publicity staff and the supply of equipment.

The following resolutions were framed and accepted unanimously:—

Whereas overfelling and departure from the prescriptions of sanctioned working plans have been necessitated by the war, and

Whereas regeneration and cultural operations have in many cases been held in abeyance.

This conference recommends, that

1. (a) A post-war rehabilitation scheme be drawn up in all Provinces under which the revision of all working plans will be undertaken within a limited period, and

(b) as far as possible and to the extent necessary short-term interim schemes including revision of yields should be undertaken as rapidly as possible after the war until such time as full revision of working plans can be undertaken.

(c) Each Province should have a Silviculturist with adequate staff.

Whereas increased transport by carts and motor lorries has caused great damage to forest roads, and

Whereas the construction and repairs to forest buildings have largely been held up during the war.

2. *This conference recommends that a post-war schemes of building and road construction be drawn up in all Provinces.*

Whereas the local training and education of forest subordinates has been largely held in abeyance during the war, and

Whereas post-war, forest plans will necessitate a large increase in the cadre of forest subordinates.

3. *This conference recommends that in all Provinces a Forest School or class be started for the training of Deputy Rangers, Foresters and where possible a class should also be started for the training of Forest Guards.*

Whereas the forests of India are likely to play an ever increasing part in the economic life of the country.

4. *This conference recommends that in the major forest provinces a Utilisation Circle should be created and in the smaller forest provinces a Utilisation Officer should be appointed to increase the production and utilisation of forest produce, particularly minor forest products.*

Whereas the value of India's forest wealth is not always appreciated by the general public, and

Whereas grazing control, soil conservation measures and in general the protection of forests impose on a small section of the people certain restrictions in the interests of the country as a whole, the necessity for which is not generally appreciated.

5. *This conference recommends that Provincial Governments should consider the appointment of a Forest Publicity Officer and provision of the necessary staff and equipment to carry out propaganda.*

Whereas,

(1) The total area of India under forest is too small and badly distributed to meet the needs of the people.

(2) Large tracts of country are inadequately provided with trees to provide fuel and small timber to the local villagers.

(3) Extensive areas of waste land unsuitable for cultivation, but suitable for forest crops exist in all Provinces including railway lands, canal banks and roadside strips.

(4) The provision of fodder and control of grazing are a crying need.

(5) The forests of India are vital for protection against floods and erosion which are a serious menace in India.

(6) In desert areas, particularly in the north west of India there is considerable sand movement which may damage more valuable land if not arrested.

(7) The forests of India under private ownership are steadily disappearing and are under inadequate management and control.

6. *This conference recommends that a Soil Conservation Circle or Land Utilisation Circle be set up under the Forest Department in each Province to deal with the above problems and in particular the aim should be to have sufficient area of each Province under forest, properly distributed and under proper management. It is generally accepted that the forest area under scientific management should not be less than 20 per cent. of the total area of the province but the economic conditions of individual Provinces may necessitate local variations.*

Whereas large areas of Government forest are at present notified only as Protected or Unclassed and are under inadequate forest management.

7. *This conference recommends that steps should be taken to declare them as Reserved forests under Chapter II of the Indian Forest Act when it is in the interests of the country to have such forests permanently preserved.*

Whereas irrigation, power and land management schemes are under the consideration of certain Provincial Governments.

8. *This conference recommends that Forest Departments concerned should be associated with the preliminary investigation to ensure the adequate protection and management of catchment areas.*

ITEM NO. 1.—DISCUSSION OF THE RESOLUTIONS OF THE SILVICULTURAL CONFERENCE.

The Chairman said that as the only three members who had not also attended the Silvicultural Conference had now had time to study the resolutions, all that was necessary was to read through the paper written by Mr. George and record such amendments and notes as the Conference might decide upon.

The result of the proceedings was as follows :—

Item 1.—*Post-war Silvicultural Research : Resolution (2).*—“ It be recommended to the Senior Forest Officers' Conference that all Provinces should have silviculturists and adequate staff.” The recommendation was approved by the Conference and the Chairman said the matter would be dealt with in Item 3 of the Senior Forest Officers' Conference agenda.

Resolution III.—“ The attention of the Senior Forest Officers' Conference be invited to the fact that most provinces and the Forest Research Institute have great difficulties in attracting the most suitable men for silvicultural research posts as in general the extra pay and allowances, if given at all, are inadequate to compensate for the arduous nature of work and living conditions, as compared with those of the normal district staff.” The conference noted the matter which, the Chairman pointed out, would be dealt with in the proceedings of item 6 of the Senior Forest Officers' Conference agenda.

Item 2.—*The effect of war on Silvicultural and Yield Prescriptions of Working Plans.*

Resolution III(1).—“ The Senior Forest Officers' Conference should be invited strongly to recommend that each province and State should start immediately to make a survey of quantities of timber, firewood and minor products likely to be required in the Province or State within the next 25—30 years. This survey should also estimate what can be produced within the Province or State, and in the adjoining territories.

(2) In the collection of this information and in the co-ordination of results obtained from it, suitable public bodies such as the Utilisation Board, Chambers of Commerce, as well as Industrial and Agricultural interests should be consulted.”

Mr. Hall said he was not present at the Silvicultural Conference and wanted to know how this resolution arose.

Mr. George said that it was raised by Mr. Petty who thought a knowledge of the requirements and resources of province was necessary in planning the rehabilitation of forests after war.

Mr. Hall said that he agreed with the other resolutions on this item but he did not agree with the resolution regarding the survey. So far as the United Provinces were concerned it was impossible to say what demands there would be during the next 25 to 30 years; the province exported timber in peace time to almost every province in northern India. The first job would be to find out what their new yields would be. He also thought that little would come from correspondence with Chambers of Commerce and Industrial concerns except a great deal of extra work.

The Chairman agreed that the first essential was to re-assess the yields of the forests. The question of a survey was a much wider matter and it would be necessary to obtain unanimous decision on the proposal. He thought that post-war industrial planning depended largely on a knowledge of the resources of the country, and said that figures, at any rate for major forest produce, would be required for the next meeting of the Empire Forestry Conference.

Mr. Sweet said that Madras was interested in the production of softwoods for which new plantations would be established; planning for these would depend on a knowledge of present supplies and requirements; he favoured a survey.

Messrs. Coffey and Golley agreed with Mr. Hall that the revision of working plans came first.

The Chairman thought that a survey was necessary and he felt sure that other countries would be doing the same thing. The real obstacle was, however, shortage of staff.

Mr. Coffey said that other matters came into this question, control of railway sleeper prices, surplus stores of war timber, regulation of imports and exports of timber after the war.

The Chairman intervened at this point and said he would like to have the opinion of the Conference as to how post-war timber requirements, which were bound to be great, should be reconciled with the probable reduced yields on account of over-felling during the war.

Mr. Hall said it was necessary to get a very early estimate of what post-war yields should be and then base everything on that. If necessary such yields would have to be exceeded for a few years to meet the requirements of post-war reconstruction.

The Chairman agreed with this opinion saying that reconstruction was, in a way, a projection of the war.

After further discussion it was decided to accept the Silvicultural Conference resolution on a Resources Survey in the following amended form.

"that, when necessary, Provinces and States should make surveys of the quantities of timber, firewood and minor forest products likely to be required in the Province or State within the next 10 to 20 years. This survey should also estimate what can be produced within the Provinces, and as far as possible, within the States and adjoining territories."

This modification was adopted by the Conference as a recommendation.

Item 3.—Resolution No. 8.—"The attention of the Senior Forest Officers' Conference should be drawn to the danger of spreading local pests round the country and of importing new pests from abroad."

The matter was noted by the Conference.

Item 6.—Afforestation of Dry Areas. Resolution No. 1.—"The attention of the Senior Forest Officers' Conference be invited to the importance and urgency of the afforestation of dry areas—particularly the

fixation of the desert—and the necessity for adequate action in the future.

Resolution No. 2.—The attention of the Senior Forest Officers' Conference be invited to the desirability of recommending that canal, railway and roadside areas should be afforested and managed under working plans prepared by the Forest Department."

The resolutions were noted and the Chairman said they would be covered in item 3 of the Senior Forest Officers' Conference.

No further amendments were suggested and the resolutions of the Silvicultural Conference were confirmed subject to the modification recommended for the resolution regarding a Resources Survey.

ITEM NO. 4.—STAFF TO CARRY-OUT POST-WAR FOREST PLANS
AND ITS TRAINING.

The Chairman said that this debate was concerned only with gazetted staff and Forest Rangers. The chief object of the debate was to ascertain from the Provinces the staff which they would require to be trained (a) during the expansion period and (b) to cover normal wastage after expansion. It was obvious that permanent accommodation could be provided only for the normal wastage, temporary arrangements would have to be made for the expansion period. Until this information was available, final plans could not be made.

Mr. Simmons said that in calculating requirements the rate of expansion was the important factor, if recruitment was very rapid cadres would be unbalanced, and if it was too slow plans could not be carried out as desired. He thought it would be possible for Provinces to expand their staff in about 10 years.

He went on to say that if Madras opened their school at Coimbatore he would have to consider what effect this would have on the Forest Rangers' College, Dehra Dun. At the moment he had not got staff for immediate expansion in spite of urgent requests to the Provinces. He anticipated there would always be an annual output of 75 Rangers and about 27 gazetted officers, and he would require an instructional staff of 13 officers for this.

Mr. Hall said that if the United Provinces Government sanctioned his post-war schemes he would take advantage of every vacancy afforded. He was reserving 25 per cent. of all posts for ex-service men and they would have to be trained. Could special arrangements be made to do this?

Mr. Golley said that the Punjab expansion schemes involved the training of an average of 10—12 Forest Rangers a year for about 8 years. He would far prefer to have them trained at Dehra Dun rather than locally; and he hoped it would be possible to arrange for it; he was not in favour of very rapid expansion.

Mr. Hall said he thought the only difficulty in the way of expansion was that of instructional staff. Accommodation should afford no difficulty as temporary buildings could be put up, as required. After the war permanent buildings for the normal classes could be constructed. There was no reason why a rush of ex-army men could be housed in temporary accommodation.

He suggested that it might be necessary to lower the standard of education for ex-service entrants.

The Chairman said that to enable those concerned to make arrangements in advance an estimate of the numbers of seats required for the three periods.

- (1) rush period immediately after the war.
- (2) up to the completion of expansion, say up to 10—12 years.
- (3) normal wastage.

This applied to both gazetted officers and Forest Rangers. As regards gazetted officers, he said that arrangements were being made with Edinburgh University to take at least 10 students from the Provinces in the course beginning in October, 1945.

Mr. Hall wanted to know the minimum educational qualifications Edinburgh would be prepared to accept.

The Chairman said that confirmation was awaited from Edinburgh University but that he expected that the minimum qualifications would be a 2nd class Honours Degree in B.Sc. in the usual natural science subjects. Provincial Governments would be informed as soon as exact particulars were known.

He referred to the proposal of Madras to re-open the Coimbatore School for Forest Rangers. He said that it was primarily a provincial matter, but whatever action was taken, the Dehra Dun College would be directly affected.

Mr. Sweet explained that no definite decision had been reached; the capacity of the school was 25 students and during the expansion period it would hardly be possible to deal with their own requirements. After expansion they might be able to take a few students from neighbouring states.

Mr. Simmons said the effect of opening the school might have unfortunate results on Dehra Dun as he would not get instructors from that Province.

Discussion took place on the relative values of Dehra Dun and Coimbatore Schools for training rangers.

The Chairman, concluding this discussion said he thought that as a temporary measure the opening of the Coimbatore School was essential as Dehra Dun would not be able to deal with the expansion requirements of the whole of India. But he thought that as permanent measure it would be best to centralise education in Dehra Dun as there were better facilities and better background training could be imparted there; the position would however, be obscure until the total requirements of all Provinces and States was known.

Mr. Simmons said that he wanted the information asked for by the Chairman as soon as possible and he hoped representatives could give it now.

Mr. Golley and Mr. Walsh said their figures were ready.

Mr. Hall and others said that the figures depended on the post war plans which had not yet received Government sanction; they were unable to supply figures without further examination of the position.

Mr. Simmons explained that he only wanted a rough estimate to enable him to get on with plans; these estimates in no way committed Provinces.

After some discussion it was decided that the President, Forest Research Institute & Colleges, should address the Heads of Provincial Forest Departments, defining the exact form in which the information was required, the information, it was hoped, would be supplied in about one month's time.

The Chairman said that the supply of this information was the chief object of the debate and asked that it might be supplied as soon as possible.

The following recommendations were framed and accepted unanimously.—

Whereas the execution of post-war plans will demand a large expansion in the cadres of both Gazetted Officers and Forest Rangers in the Provinces and the States.

Whereas special arrangements may have to be made to train large numbers of disabled officers and men over a short period immediately after the war.

This conference recommends that

1. early steps be taken to provide suitable accommodation for the students and the staff and college buildings at Dehra Dun,

2. the attention of the Province be drawn to the fact that unless instructional staff forthcoming the expansion of the Colleges will not be possible,

3. in view of the difficulty of obtaining sufficient instructors from the Provinces, and in view of the increasing benefit which the States are deriving from the Indian Forest College and the Forest Ranger College, some of the larger States be invited to contribute officers for the instructional staff.

ITEM NO. 5.—MINIMUM EDUCATIONAL QUALIFICATIONS PRESCRIBED FOR THE RANGERS AND THE SUPERIOR FOREST SERVICE COURSES.

The Chairman said the first matter to be considered was whether there should be any alteration in the educational qualifications, secondly, if so, to what extent the standard should be altered and thirdly whether such changes, if made, should be permanent or temporary. He asked Mr. Mobbs, as Director of Education, to give his views.

Mr. Mobbs said he was only qualified to speak on the Superior Course of the Indian Forest College, because he had hitherto had nothing to do with the Ranger College. Many people, he said, did not realise that the qualifications for the Indian Forest College had been appreciably widened since the college opened in 1938. Originally the old qualifications laid down for the I.F.S. course were stipulated, which simply demanded an Honours Science Degree not lower than second class in certain specific subjects. He had that widened to include a second class Honours Degree in any Natural Science or in Mathematics or Agriculture. Also since some agricultural colleges did not give an Honours Degree in Agriculture, a first class pass degree in agriculture was admitted. Mathematics were admitted because it was found that many students had taken physics and chemistry, and for the Forest College a mathematical degree was just as good as a degree in physics and chemistry. The question which now arose was whether the widened educational qualifications should be still farther widened. Many provinces said that they could not get men of the right type with an honours degree. They had, therefore, sometimes to accept men without an honours degree. Again, Assam found it very difficult to find men of the desired communities with honours degrees. They had done the next best thing by sending men with pass degrees in the first class and with distinctions. In addition they had selected candidates who, in addition to this qualification, had taken an additional optional subject botany in the Intermediate science examination, which was very useful. This additional subject had sometimes been taken after the degree. This had got over the difficulty the Assam Public Service Commission had experienced in finding men who had studied both Mathematics and Botany up to the Intermediate standard.

Another problem which had arisen was that some Universities did not now give honours degrees: for instance, Bombay, and he thought that, as a war time measure, Allahabad had stopped its honours degrees. Consequently it had become very difficult to decide whether a given qualification was good enough or not. A further point was the difference in standard between universities. A pass degree in certain universities was perhaps almost as good as an honours degree of other universities. He had to be careful in quoting universities, but in Calcutta to obtain an honours science degree a candidate must obtain a minimum of only 30 per cent of marks in mathematics and only 27 per cent in theoretical science papers. Other universities had adopted different standards and consequently they were continuously up against this question of standard. A first class pass degree in one university may actually be better than a second class honours degree in another university. He was himself quite prepared to modify the educational qualifications so as to admit a first class B.Sc. degree or a B.Sc. degree with distinction, which comes to the same thing, in addition to the existing qualifications. He

would equally be prepared to accept a second class agricultural pass degree from the Punjab which has a very good agricultural college at Lyallpur, because they had, he understood, given only four first class B.Sc. (Ag.) degree in 17 years. The Punjab had actually had to send men with second class agricultural degrees and what was admitted for the Punjab must be admitted elsewhere.

To sum up, he suggested that the Conference might recommend the acceptance of a first class pass degree, or a pass degree in the first division or with distinction in any natural science or in mathematics or a pass degree in agricultural not lower than second class.

If the conference agreed to accept this minimum standard, the next question was whether the change recorded should be as a permanent alteration in the college rules or whether it should be a temporary measure for war time and the immediate post-war period. Recruitment difficulties were perhaps only war time difficulties. He believed that seven years ago the United Provinces had something like 3000 applicants whereas last time the number of applicants went down to about 20. That seems to be a war time condition and the post-war period might require similar special consideration. But he thought that India had settled down after the war there would again be no shortage of men with the existing qualifications.

Mr. Hall said, he was afraid that did not apply to the United Provinces.

Mr. Hobbs said the United Provinces had actually sent him men with qualifications higher than those demanded.

Mr. Simmons said his own experience in Assam was that the last service for which there was any competition was the forest service, and what was really wanted was to avoid a wide variation in the qualifications which would necessitate a reduction in the syllabus.

Mr. Hall said the point was common to all. The difficulty in the United Provinces was extremely serious. It had been like that for several years. The real reason was that the forest service was not popular. Men were now going to the Excise, Public Works and other departments rather than to the Forest Department. The second reason was that the expenses of the boys when they came to the Forest College, Derhā Dun, were very high. He was not suggesting for the moment that they should try and reduce these expenses. Moreover, the U.P. students only got their stipend on loan, and it was recovered later from their pay. He had recently got Government to agree that the stipend should be non-recoverable. Another reason why recruitment was bad for the Forest Service was that after completing his university education a man could enter direct into other Government departments, but for forest department he had to come to the Forest College for two years and had to incur extra expense there. About the question of qualifications, he was quite prepared to accept Mr. Hobbs's recommendations on this question, and on the second point he was quite prepared to make the change permanent and include it in the forest college rules.

Mr. Simmons enquired if they were going to make changes in the qualifications and agreed to first division or distinction, whether they would still

get requests that the rules might be waived by the President on the grounds that the Provinces could not get men with these qualifications. One of his difficulties was the frequency with which Provinces asked him to waive the rules, and it had tended to become a matter of routine.

The Chairman said there should be no question of regular waiving of the rules. It was probably not quite clear that the minimum qualifications proposed by Mr. Mobbs were intended to be adopted by all Provinces in their selection of candidates. What he wanted to know was whether any of the provinces desired an even lower standard; in the note submitted to the Conference by Assam the suggested qualification was "B.Sc. graduate". The position as regards Bombay also was not quite clear as science subjects could apparently be taken in the B.A. degree as well. The important point was that provinces should not advertise qualifications lower than the accepted standard, whatever it might be; it might be necessary to waive the rules in special cases but a lower standard should not be advertised. He believed that this had happened in one or two cases.

Mr. Walsh explained the Bombay degrees and said that he had no wish to go below the standard now suggested. He pointed out that they were not bound to recruit down to the minimum.

The Chairman agreeing, said that was an important point. Lowering the minimum qualification did not necessarily mean lowering the standard of forest officers. In India high academic qualifications were not the most important requirement; they wanted first of all the right type of man.

Mr. Nicholson suggested that in view of the proposal to lower the standard a qualifying examination might be necessary, and

Mr. Subbarwal agreed.

Mr. Mobbs explained the difficulties in the way of this suggestion and said that it would not necessarily assist in getting the best men; the candidates were personally interviewed for selection and this together with the fixing of a minimum standard was enough.

The Chairman thought that mathematics up to the Intermediate examination was essential for gazetted officers.

Mr. Mobbs agreed but said it was not always practicable. The rules clearly emphasised that it was desirable.

Mr. Coffey thought they might solve the problem of defining natural science; a B.Sc. Hons. degree in any natural science or in Mathematics or in Agriculture was too wide. They ought to weed out some of the subjects, and limit the qualifications to two or three natural science subjects only.

Mr. Mobbs explained that this meant going back to the old rules. What was required was a good scientific background, and that was provided by a science degree, which automatically meant that two or three subjects had to be taken in the Intermediate examination. A degree in Geology, for instance, was just as useful as a background for Forestry as a degree in Physics or Chemistry. He was therefore against any limitation of the scope of the science degree; but emphasised that a knowledge of mathematics and botany up to the standard of the Intermediate Science

Examination was desirable. This had been clearly stated in note 2 to rule 13 of the Indian Forest College rules ; but was difficult to make compulsory as in some Indian universities, the combination of mathematics and botany in the intermediate was not possible.

The Chairman understood that the Conference accepted widened educational qualifications for the Indian Forest College but pointed out that they still had to decide whether the alteration should be permanent or temporary.

Mr. Hall.—*Mr. Mobbs's* amendment should be put in the rules.

The Chairman said that after the war the provinces would probably have to accept a lower standard for demobilised service men, so revision might in any case, have to stand for some time. The rules could always be amended again at a latter conference if a return to the present standard was desirable. He took it that the Conference agreed to the necessary alteration of the rules.

The Chairman then referred to the Conference the question of the minimum standard for Forest Rangers. He understood that there was a school of thought that favoured a reduction to Matriculation in order to facilitate the entry of students from the agricultural classes.

Mr. Wain said they wanted no change in Bombay.

Mr. Simmon doubted the advisability of lowering the standard of Rangers from the Intermediate.

Mr. Mobbs said he would like to make Mathematics up to Intermediate compulsory and asked for the opinion of the Conference.

Mr. Hall thought that as far as possible candidates should have studied Mathematics up to the Intermediate standard but to make it compulsory was too drastic. He thought that a note might be added to the rules saying that Mathematics up to the standard of Intermediate was desirable.

Mr. Mobbs thought this be adopted and the rules left otherwise as they stood.

The Chairman put this to the Conference and it was approved. The Conference agreed that no change in the standard was desirable.

Mr. Simmons said he would like to know whether Provinces were satisfied with the type of officer being turned or whether any revision of the syllabus was desired. It would help the College authorities to know about this.

Mr. Nicholson said they had done extraordinarily well in charge of divisions. Three of them were in charge of large divisions in Orissa and they had only put in two years in the field.

Mr. Hall said he himself had been satisfied with the training of the Superior Forest Service class. But with regard to the Rangers the majority of his Conservators, whom he had consulted on this point, agreed with him that their training should be far more practical than theoretical. He just wanted to emphasise that the subject was discussed in 1942 at the Board of Forestry and so far as the United Provinces were concerned he would prefer that there should not be similarity in the training of Rangers

and the Superior Forest Service Officers. He therefore put it to his Conservators whether he should suggest that the period of the courses should be altered, that is whether the Superior Course should be increased or the Rangers Course decreased. On that point all Conservators were unanimous that they neither wished that the Superior Course should be increased or the Rangers Course decreased. They suggested that the Rangers training should be made more practical than it appeared to be at present.

Mr. A. Hofman expressed his agreement with Mr. Hall.

The Chairman thought they could take it that this was the opinion of the Conference. He was not sure that they could make a resolution on this subject. It would certainly be recorded as the opinion of the Conference.

The following recommendations were framed and accepted unanimously.

Whereas there are difficulties in obtaining students for the Superior Forest Service Course with the educational qualifications prescribed in the rules, and

Whereas some universities have ceased to give honours degrees,

This conference recommends that

1. the educational qualifications at present prescribed for the Superior Forest Service Course be widened so as to admit students who are in possession of degrees not lower than,

a first class degree or a pass degree in the first division in any natural science or in Mathematics, or a pass degree in agriculture not lower than second class and that the rules for the Superior Forest Service Course be amended accordingly.

Whereas the educational qualifications of Ranger College students have recently been raised to Intermediate standard.

This conference recommends that

2. the standard is sufficiently high neither does it require to be lowered.

Whereas mathematics up to the matriculation standard in the qualifying examination for Forest Ranger candidates is the maximum that can be enforced, a higher standard is desirable.

This conference recommends that

3. a note be added to the Rules for Ranger students that the Intermediate standard in mathematics is desirable.

4. the attention of Public Service Commissions be drawn to the Rules regarding the qualifying examination so that any alternative examination they hold may not be of lower standard.

ITEM NO. 6.—CREATION OF A CENTRAL FOREST SERVICE.

The Chairman opened the proceedings by pointing out that the subject for debate, originated with the Board of Forestry meeting in 1942. He read out that part of the proceedings of the Board in which the subject had been introduced. The suggestion had not received full support at that time and it had been placed on the agenda of this conference with the object of soliciting the opinion of the Senior Forest Officers' Conference and arriving at a decision. Provincialisation and the difficulty of obtaining Instructors for the Colleges brought this subject to the forefront. He said that Mr. Nicholson had written a paper on this subject and asked him to open the debate.

Mr. Nicholson said he had little to add except to draw attention to his proposal that the Government of India should guarantee posts borne on provincial cadres for India List recruitment to the extent that the Government of India should recompense provinces for posts not taken up by them by contributions equal to the average salary of forest officers in the service plus leave and pension contributions.

In reply to a question by the Chairman Mr. Nicholson explained that in his note, except for the first paragraph, the words "India List" should be substituted for "Federal Forest Service"; it was clear from his note that he was not in favour of an independent Central Forest Service.

Mr. Simmons explained that altogether some 28 India List posts would have to be distributed over provincial cadres if recruitment by the old system were continued. This would mean that large provinces would have to provide three posts each and the smaller two. He was in favour of an India List.

Mr. Nicholson thought that the States also might be included.

Mr. Simmons thought that the filling of India List posts was dependent on the qualifications of officers required to fill them; it was essential that the posts of Forest Entomologist, Forest Botanist, Silviculturist and Utilisation Officer should be men with experience of forestry.

Mr. Hall said that every one agreed that the problem was a difficult one. Generally speaking he agreed that it should be possible to form a Central Service on the lines indicated by Mr. Nicholson. He said that specialist posts would be filled without reference to provincial cadres. Other posts such as Silviculturist, Assistant Silviculturist, Instructors and Assistant Instructors, Andamans Forest Officers etc. must be filled by experienced officers trained in the provinces; any other arrangement would be divorcing these principles from the realities of the practical forest officers work. He went on to say that he thought that such posts as Inspector, General of Forests, President, Forest Research Institute & Colleges, Director of Education, should be taken off provincial cadres as the incumbents never returned to their provinces.

Mr. Simmons was not so sure about the post of Director of Education; he might wish to retain as Chief Conservator of Forests.

Mr. Subbarao said the first point was to classify the India List on the basis of which posts must be held by forest officers and which need not

He agreed that the posts of Forest Entomologist and Forest Botanist should be filled by Forest Officers. The second point to consider was whether the system of reservation of a few India List posts had worked satisfactorily or not. At present Provinces found it difficult to spare officers; after the war the situation would ease. Before the war there had been no great difficulty in getting officers. He was of opinion that the old system of recruitment should be retained and that provincial cadres should provide posts for all-India requirements.

The Chairman said that what would really solve their difficulties would be an all-India Service, but provincialisation had made that impossible. He thought they must try to see exactly what was involved in trying to set up a Central Forest Service, whether it could include satisfactorily the instructors posts as well as the permanent posts which had been mentioned. To begin with it would be necessary for the Government of India to select candidates and get them trained first at the College and then in the Provinces, during which time, and it would be several years, the Provinces would have to fill the posts as at present. The only other way to build up the service would be to take men on a permanent basis at once from the Provinces; but the cadre would be a small one and prospects limited, therefore transfer to it would not be popular. Selection for the specialist and instructional posts must be from a wide field and with direct recruitment it would be difficult to get suitable men.

Mr. Simmons said that the posting of Central Service Officers under training to divisional charges in the provinces would cause difficulties.

The Chairman then asked *Mr. Mobbs*, as Director of Education, to give his views.

Mr. Mobbs was under the impression that there was already a "Central Forest Service" consisting partly of directly recruited specialists and partly of men on deputation from provincial cadres. From the point of view of education he thought that direct recruitment to a Central Forest Service would be unworkable. He considered that for Instructors five years field experience was quite inadequate. For the Superior Class it was essential that Instructors should have prepared working plans and junior officers could not do this. Instructing required special qualifications and a good forest officer did not necessarily mean a good instructor.

Mr. Hall thought that provinces were not particularly interested; they wanted the present arrangement to stand.

The Chairman said that a small Central Forest Service might be said to exist already, consisting of the scientist element at the Research Institute and a few forest officers in the Andamans and Coorg. But it was not a properly constituted cadre. It might have to be added to after the war but its functions could not be expanded to any great extent. He understood it was the opinion of the Conference that the creation of an independent Central Forest Service to carry on all the duties of the Forest Research Institute and the Colleges was unsound.

On the Conference assenting, the *Chairman* stated that as the proposal had been turned down it was logical that the Conference should debate and make recommendations on alternative measures for getting over

recruitment difficulties, the work of the Institute and the Colleges had to be carried on and men would have to be provided by the provinces.

Mr. Simmons asked how long it would take to get men in this way. The trouble was that most provinces now bore no India list posts on their cadres.

The Chairman said it was very difficult to get volunteers and he would like to know if there were any special reasons for this.

Mr. Hobbs said that the terms were not sufficiently attractive.

The Chairman enquired if this was the general opinion of the members and received unanimous assent.

Mr. Subbarical said that as regards terms, allowances should be for posts, that is to say if a man came as an Instructor he should receive the allowance attaching to the Instructor's post, no matter what service he belonged to. This was fair because Instructors had to maintain a higher standard of living than Assistant Instructors.

Mr. Simmons thought that the principle should be that whoever pay, including any special pay, the man was drawing in his province, he should continue to draw it, plus the Dehra Dun allowances.

Mr. Hall pointed out that in the United Provinces there was a minimum rate of pay for holding charge and that would prevent junior officers from volunteering for Dehra Dun.

Mr. Coffey remarked that the same applied to Bengal.

Mr. Hall said that in spite of war difficulties I.F.S. officers were being asked for as Instructors but only very few were available.

Mr. Simmons said that he did not mind whether he got P.F.S. or I.F.S. men, what he wanted was good men who could do the job.

The Chairman said that he could not agree with Mr. Simmons's earlier proposal entirely because some provinces gave special pay for a divisional charge while others did not. The United Provinces and Bengal divisional Forest officer received a minimum rate of pay irrespective of length of service and he understood that the Punjab were considering this also. This constituted a serious obstacle to getting volunteers. Apart from this few Forest officers liked giving up the chance of holding charge of a division; it was a much sought-after appointment. He thought the best solution was to offer a minimum rate of pay for the posts, which would attract more men and make possible recruitment from amongst promoted Forest Ranger, amongst whom existed excellent material for the posts of Assistant Instructor and Research Assistant. This would not, however, benefit the more senior men; the only way to attract them was to offer higher allowances.

Mr. Davis remarked that Government of India rates of travelling allowance were less favourable than provincial rates; also when an officer had to root up himself and his whole family and move from a remote part of India to and settle down in Dehra Dun it was all going to cost him something; both factors deterred officers from volunteering. He suggested that provincial travelling allowance rates should be adopted for Dehra Dun officers.

Mr. Mobbs admitted that on railway journey he lost money on Government of India travelling allowance rates and pointed out that another cause of high cost of living was the fact that the Research Institute & Colleges were 5 miles from Dehra Dun and that the cost of sending children to school daily was heavy. In some cases there were language difficulties at the schools.

The Chairman said that provincial travelling allowance rates could not apply but that about the conference recommended enhanced allowances for officers at Dehra Dun, this matter should be taken into consideration. He admitted that expenses at the Forest Research Institute and the Colleges were notoriously high even in peace time as he had discovered to his cost when at the Raipur College. But it was not only the question of cost; men joined the Forest Department because they liked the life; comparatively few liked teaching or research work and were happier in their provinces.

He said that all the ground seemed to have been covered and they could proceed to draft recommendations.

The following recommendations were unanimously accepted:—

WHEREAS in recognition of an independent Central Forest Service it is a desirable proposition that

WHILEAS great difficulty is being encountered in obtaining volunteers from Provincial Services to fill posts at the Forest Research Institute and Colleges, and

WHEREAS officers of the requisite experience and qualifications are unwilling to come to Dehra Dun because the terms offered are unattractive, and

WHEREAS it is necessary to widen the field from which suitable officers from the Provincial Forest Services can be drawn upon for recruitment to India List posts, and

WHEREAS the number of India List posts borne on the cadres of Provincial Forest Services are insufficient to meet the needs of the Central Government.

This conference recommends that

1. each post at the Forest Research Institute & Colleges ordinarily filled by gazetted officers recruited from the Provinces should carry a minimum salary of Rs. 600/- p.m. and that officers so appointed to these posts should draw either their grade pay or the minimum pay, whichever is the greater.

2. The posts of the Forest Research Institute & Colleges should be graded into class A and class B posts for which the present Dehra Dun allowances should be raised to Rs. 800/- and Rs. 200/- p.m. respectively. So far as the College staff is concerned, Principals of the Colleges should be given an additional allowance of Rs. 50/- p.m. in respect of house tutor's duties. The above allowances should attach to posts and not to services.

3. House rent compensatory allowances of Rs. 100/- and Rs. 65/- p.m. for class A and class B posts should be fixed as a permanent measure.

4. Provinces should be requested to bear on their cadres as many India List posts as may be agreed upon between Central and Provincial Governments. Central Government should consider the question of bearing all expenses in connection with the training at the Indian Forest College of the requisite number of officers to fill the India List posts on Provincial cadres.

5. Should the Indian States depute officers for the instructional staff, vide recommendation 3, item of agenda No. 4, they should also be entitled to all the financial benefits recommended in 1, 2 and 3 above.

6. The pay and allowances recommended in 1, 2 and 3 above should be payable with retrospective effect from 1st April 1945.

ITEM NO. 7.—APPLICATION OF THE "NEXT BELOW" RULE
TO ALL FOREST OFFICERS SECONDED AT DELIRA DUN.

The Chairman referred to the note on the subject written for the Conference by Mr. Simmons and asked him to open the debate.

Mr. Simmons said he had been asked to write the note but he was not quite sure why. He thought it put the exact position, and did not think any further elaboration was really necessary.

The Chairman referred to Mr. Simmons note and said he did not think the rule could operate in the case of promotions from one service to another. Such promotions were by selection and if such a case arose directly affecting an officer on deputation to Delira Dun, he would be promoted, if selected, and remain seconded and the vacant post in the province filled by the next man. He did not think the rule could apply in the case of Chief Conservators ; promotion to this post was strictly by selection and it would be for the Provincial Government to recall the officer should he be selected.

Mr. Simmions said he would like to raise the question whether the next below rule should operate in the case of leave vacancies.

Mr. Hall said it seemed unnecessary to frame a resolution on this question. Even before provincialisation in temporary vacancies, up to six months, local arrangements were made to fill the posts ; similarly, the "next below" rule would not be operated in such cases.

The Chairman remarked that the question as to whether Article 20-A should be made applicable to more than the 5 Forest Research Institute posts to which it now applied was still undecided. He was of opinion that, just as in the provinces Provincial Governments decided each case on its merits, so Forest Research Institute cases could be referred to the Central Government for decision. When the question was put to the Conference it was agreed that no change was necessary and no recommendation was required.

ITEM NO 8—TO CONSIDER THE POSSIBILITIES OF PROVIDING A GRADUATED COURSE FROM THE FOREST SCHOOL TO THE INDIAN FOREST COLLEGE.

The Chairman, opening the discussion, said that as far as he understood, the object of the training was to give students a wider back ground than was possible with the present courses at the Indian Forest College and the Forest School. Students would be so educated that careers other than Government or State forest appointments would be open to them, for example, agriculture, the timber trade and private forest employ. They would be trained practically and scientifically up to the Ranger standard at the Forest School, which would be a "preparatory school" for the Forest College; from the school they could either go into service or qualify for the Forest College. Presumably students would be taken at an age younger than present Ranger candidates and possibly down to matriculation standard.

Entry to the Forest College would be by competitive examination and would be open to (a) students from the Forest School, (b) Provincial and State nominees with qualifications as at present, (c) ordinary private students.

It was stated that an advantage of the idea was that a proportion of forest officers would be turned out with a good back-work in forestry with exclusive knowledge of their profession. The description of the proposal shows that boys trained at the School may or may not pass into the College. Obviously all would try; only those who failed would be available as Rangers for Provinces or States, and there would always be uncertainty as to the numbers. That was one difficulty and others might come to light during the debate.

Mr. Simmons thought that the idea was that students would go to the Forest School first and then to the College for a year for training as gazetted officers. There were two alternatives, either the students must go to the School with a degree, because they cannot go to the College without it or they would have to be taken without having passed even the Intermediate. He considered the whole proposal vague.

Mr. Hall presumed that the school, if it came into being, would be at Dehra Dun. He went on to point out that the proposal offended against the India Act of 1935, which provided that Government officers must be recruited by selection by the Public Service Commission.

Mr. Mohle said he often got applications from private persons who wanted training in forestry; he would like to see a college for the education of such persons in forestry. In the U.S.A some 3000 private students were trained annually in forestry. The proposal implied a radical change in forest education.

Mr. Hall said that the present rules provided for the admission of private students.

The Chairman said that there were very few opportunities for the employment of private students, no matter how many applications there might be; conditions were quite different in America. A fundamental difficulty was to reconcile the proposed scheme with necessity for turning out both

gazetted officers and Rangers in conformity with service and statutory rules. Provinces and States would never be sure of their quotas, communal proportions could not be maintained unless provinces and States were prepared to accept candidates from outside, and this most of them would be most unlikely to do. But there were greater objections; there was a fundamental difference between the training of gazetted officers and of Rangers. The special training required for Rangers could not satisfy the objects of the proposed school; the change would mean an inferior Ranger service. On the other hand, experience showed that comparatively few Ranger students, on passing out were suitable to go on to the Forest College. The present system had produced splendid forest services for many decades and he was opposed to any change.

The proposal was then put to the Conference for opinion and being unanimously opposed, no recommendation was considered necessary.

ITEM NO. 2.—EXPOSITION AND DISCUSSION OF THE EFFECTS
OF THE WAR ON (A) SILVICULTURE AND (B) WORKING
PLANS AND MANAGEMENT.

The Chairman said that the subject was exactly the same as Item 2 of the Silvicultural Conference agenda in the debate on which all except three of the members of the Senior Forest Officers Conference had taken part. He proposed to read the paper written by Mr. George at the Silvicultural Conference, which was a review of the various papers submitted by the Provinces ; the resolutions on this item had already been approved by the Conference.

After reading the paper, the Chairman ascertained from the Conference that no further discussion or resolutions were considered necessary.

ITEM NO. 9.—LEGISLATION FOR THE CONTROL OF PRIVATE FORESTS.

The Chairman called on Mr. Hall to open the discussion.

Mr. Hall said he had written a note on this subject which had been circulated to members of the Conference. He had raised it in connection with his post-war scheme of Land Development which was estimated to cost about Rs. 40 lakhs in the first 5 years, including the cost of acquisition of about 400,000 acres of waste land. He did not propose to go into details of this scheme which dealt with the creation of fuel and fodder reserves, the improvement of grazing and fodder resources, the problems of erosion and floods and all other relevant matters. An important feature of the scheme was their proposal to exercise some form of State control over private forests and waste lands. In the United Provinces he feared they would have considerable opposition to the proposal. The Tenancy Act of 1939 caused bitter controversy. He had, quite frankly, an open mind on the two important questions of (a) the extent to which State control should be exercised and (b) the nature of the legislation required. Some Provinces had already tackled this question and he would be grateful for their advice.

Mr. Nicholson said he began to tackle this problem in Orissa in 1936, starting on 30,000 square miles of private forest. He had revised the Indian Forest Act in certain respects in order to meet his ends; for instance, he had amended section 35 of the Act to regulate the felling and removal of trees and forest produce, and this allowed the introduction of working plan prescriptions; provision was also made for the employment of trained forest officers under this section; the purposes had also been extended to include agricultural welfare, to give powers to control private forest exploitation in the interests of the agricultural needs of the people.

A very important amendment was the provision in the Indian and Madras Forest Acts for the compulsory acquisition of forests [Section 37(2) Indian Forest Act].

The Chairman asked Mr. Sahbharwal to speak on the Bihar Bill.

Mr. Sahbharwal said that in 1911 a Private Forests Bill was drafted but it was not approved by the Assembly. Subsequently section 38, Indian Forest Act, was used. Government, leasing the forests for 40—45 years on a rental of a few annas per acre per annum, the profits being shared; this had not proved very successful, and a new bill had been drafted, which was awaiting approval; he did not doubt that it would be passed. Continuing, he said that there were some 8,000 to 9,000 square miles of private forest as compared with 2,000 under Government. As soon as the Bill was passed it would be applied at once to catchment areas. For the management of these forests his Government had agreed to create a Conservator's post.

The Chairman said that he thought the provisions of Chapter II of the Bihar Act were very mild and inadequate for the proper protection of forests and there was no provision for a working plan. The restrictions were uncomfortably similar to those in force in the unclassified forests of the hills of North West India, where destruction was now far advanced. On the other hand, chapters 3 and 4 provided for absolute control by

Government ; he would like to hear what policy it was proposed to adopt in applying the provisions of these chapters.

Mr. Sabharwal replied that, in fact, Chapters 3 and 4 would be applied straight away, wherever protection was really necessary.

Mr. Hall enquired whether the Bihar Government proposed to incur expenditure on the rehabilitation of private forest, and *Mr. Sabharwal* replied that they would, he thought up to Rs 70,000 a year at least.

The Chairman asked *Mr. Coffey* to discuss the Bengal Private Forest Bill.

Mr. Coffey said the Bill had not yet passed the Assembly. The object was to control and afforest privately owned waste as well as forest ; waste land he said, would be required gradually. When the Bill was passed a *tena* would be notified and owners of private forest would have to prepare working plans, or get them prepared by Government ; if they failed to do so the forests would pass into the complete control of Government. As regards costs Government would find all surveying staff for 10 years ; thereafter a cess of one or two annas per acre would be levied which was expected to cover the cost of supervision. The owner would get all the profits.

The Chairman asked *Mr. Coffey* to explain to the Conference the meaning of " controlled forest " and " vested forest ".

Mr. Coffey said that, briefly, " Controlled forests " were those for which working plans had been prepared, but which would remain under the control of the owner. " Vested forests " were those which would be placed under the complete control of Government. If it appeared then an owner were incapable of managing his forests the management could vest in Government at once ; similarly if the owner of a " controlled forest " failed to comply with the provisions of the working plan, after due notice the management could be taken over entirely by Government. Regional Forest Officers were to be appointed to prepare plans and generally to enforce the Act. The owner were given ample opportunity to appeal to a Board set up for the purpose.

Replying to a question as to how the development of the forests was to be financed, *Mr. Coffey* said that as a result of proper management income from the forests would fall to begin with, but owners would be able to obtain loans on the security of their forests at a certain rate of interest. Continuing, he said that waste lands could be acquired under the Bill, the price being evaluated by the District Magistrate.

Mr. Hall said that in the United Provinces they proposed to have their own Land Acquisition Officer attached to the Forest Department.

The Chairman asked whether there would be any limitation to the period of Government management of " vested " forests.

Mr. Coffey replied that after 15 years they would be restored to the owner provided he could guarantee proper management, after 30 years all " vested " forests had to be restored.

Messrs. Golley and Piraj explained various aspects of the Hazara Forest Act in the N W F Province in particular the provisions dealing with powers of demarcation and closure.

The Chairman asked Mr. Walsh to describe the Bombay Land Development Act.

Mr. Walsh said that the Bombay Act provided for control of land improvement in almost any direction. For this purpose a Board had been constituted which consisted of the local Revenue Commissioner, the Conservator of Forests and the Director of Agriculture. Schemes might include preservation and improvement of soil, prevention of erosion, water logging, agricultural technique, control of grazing, afforestation etc.

The Chairman asked what was the nature and extent of private forests in Bombay and whether the Bombay Rural Development Act made adequate provision for proper management of these forests including the preparation of working plans.

Mr. Walsh replied that the exact extent of the Forests was not known but that there were some large compact blocks. There were deficiencies in the Act connected with private forest management which could be remedied by a private forest bill.

Mr. Sweet then explained the proposed amendments to the Madras Forest Act which, amongst other things, would enable the acquisition of private forest. He said that under the Act the management of private forests under working plans was possible; they proposed to acquire considerable areas of waste.

Mr. Day stated that there were few privately owned forests in Assam and they did not constitute a problem.

The Chairman thought there was general agreement that a bill was essential to ensure the preservation of private forests. There were two important considerations.

(i) the bill must provide for preservation and development of the forests, and to do this it must make provision for management under sanctioned working plans, which must be executed by trained staff. (ii) the degree of interference which considered necessary to secure that above object. He would like to illustrate this point by describing the various degrees of interference which were possible by the example of the Simla Hill States forests.

At the top there was the case whether the forests were leased by Government and were under their complete control, the greater part of the annual surplus being paid to the Rajah.

In the next class, the Rajah was nominally in charge of the forests, but he had to employ a Government forest officer selected for him and the working plan operations were supervised by Government.

In the third class the Rajah had complete control and could select his own staff provided it was qualified; but Government retained the right to inspect the forests and insist on proper management at any time.

The fourth class differed from the third in this respect only that the forests could be inspected and reported on every three years, though control forms were checked annually.

Finally, there were States where the Rajah has absolute control and inspection by Government forest officers was at his invitation.

But one feature which was common to all was that working plans were prepared by Government.

In framing resolutions these matters would, he thought, have to be considered.

Mr. Hall rose to express his thanks to the conference for enlightening him on the whole subject. He said the United Provinces were fairly backward in dealing with this question in comparison with some Provinces. As regards resolutions, he suggested that the Conference should recommend some form of State control and that legislation should provide for management under working plans approved and controlled by Government. He considered that, in general, the Bengal Private Forests Bill seemed suitable.

The Chairman referred to the part Provincial Government might have to play in financing the rehabilitation of private forests, particularly where they lay in important catchment areas. Some Provinces, for example, Bihar and Madras, appeared to be ready to spend considerable sums.

After discussion it was agreed that legislation should include within its scope where necessary provision for afforesting privately owned waste land, and that a recommendation should follow. The Chairman then thanked *Mr. Hall* for having introduced this important subject, and the debate then closed.

The following recommendations were accepted by the Conference.

Whereas owing to lack of control, privately owned forests and waste lands throughout India have been progressively denuded and largely rendered valueless, amounting in some cases to complete destruction by overfelling and excessive grazing.

Whereas such denudation and destruction is endangering supplies of timber, firewood and fodder is causing erosion, is adversely affecting water supplies and is rendering land liable to the destructive action of floods.

Whereas the restoration and preservation of such land is essential in the interests of public welfare.

Whereas it is primarily the duty of the State to ensure that private forests and waste lands are properly and scientifically managed.

Whereas existing legislation is inadequate to enable Government to exercise effective control of privately owned forests and waste land.

This conference recommends that

1. each province should undertake an investigation into the extent and condition of all private forests and waste land, but such investigation should not delay the introduction of legislation,

2. legislation should be introduced to provide for the proper conservation of privately owned forest and waste land; such legislation should provide for the management of all such lands under working plans approved and controlled by Government and for the execution of such plans by trained forest staff,

3. although it is desirable to encourage the management under approved working plans, of private forest and waste lands by the owners themselves, Government should be empowered by legislation to assume the management of such lands when such a step is considered essential.

ITEM NO. 10.—GRANT OF PREMIA TO FOREST SUBORDINATES.
EMPLOYED ON WAR TIMBER SUPPLIES.

The Chairman asked Mr. Nicholson to open the debate as he had asked that the question might be placed on the agenda and had contributed a note.

Mr. Nicholson pointed out that most Provincial Governments had sanctioned extra remuneration for staff carrying out additional duties arising out of the war. On the other hand, the Forest Department subordinates who were doing a great deal of war work in connection with the supply of timber for war purposes, were not getting any extra pay at all, and all his Divisional Forest Officers were in agreement that some extra remuneration should be given. If a resolution to this effect were passed, he thought it might be of some help.

The Chairman enquired whether the staff referred to was employed on timber work for the Supply Department or on forest exploitation. He thought that in some Provinces seconded forest subordinates working under the Supply Department were receiving additional pay.

Mr. Nicholson said that the staff he referred to were doing timber work in addition to their ordinary duties.

The Chairman said the remedy appeared to be the employment of additional staff.

Mr. Nicholson said it was difficult to find recruits.

Mr. Hall said he did not think his Government would sanction a war allowance; they gave special pay to all Rangers on war work.

Mr. Coffey said that in Bengal they had asked for a war allowance but were told to employ more men.

Mr. Walsh said that in Bombay war allowance had also been turned down.

Mr. George said that in the Central Provinces there was a system of honoraria payments, but it took a long time to get them sanctioned.

Mr. Nicholson asked how many provinces agreed with him.

The Chairman said that all sympathised with him, but agreed that it was a matter for each province to take up individually. No resolution seemed necessary.

The proceedings of the Conference ended with a proposal of a vote of thanks to the Chairman by Mr. Hall, which was seconded by Mr. Henniker Gotley.

The Chairman in reply thanked the members for their co-operation and in particular the members of the resolution drafting committee, Messrs. Hall, Gotley, Nicholson and Sweet.

APPENDIX I.

Papers discussed at the first meeting of the Senior Forest Officers Conference April 1945.

RESOLUTIONS OF THE SILVICULTURAL CONFERENCE APRIL 1945.

ITEM 1.—POST WAR SILVICULTURAL RESEARCH.

WHEREAS

(1) Owing to war conditions, silvicultural research has largely been held in abeyance (on a "care and maintenance" basis) and research staff employed on urgent war works.

(2) It is desirable that immediately after the war, silvicultural research should be re-established to deal urgently with problems directly resulting from the war and also connected with post war development.

(3) The resumption of silvicultural research is dependent upon the immediate provision of adequate and suitable staff.

THIS CONFERENCE RESOLVES THAT—

(1) The resolution on items 1 & 2 of the Quinquennial conference of 1939 be re-affirmed, and considers that the pre-war organisation of silvicultural research should be continued in the post war period, modifying it and extending it in accordance with post war necessities, special attention being paid to the importance of providing adequate staff.

(2) It be recommended to the Senior Officers' Conference that all provinces should have silviculturists and adequate staff.

(3) The attention of the Senior Officers' Conference be invited to the fact that most provinces and the Forest Research Institute have great difficulty in attracting the most suitable men for silvicultural research posts as in general the extra pay and allowances if given at all are inadequate to compensate for the arduous nature of work and living conditions as compared with those of the normal district staff.

ITEM 2.—THE EFFECT OF WAR ON SILVICULTURAL AND YIELD PRESCRIPTIONS OF WORKING PLANS.

WHEREAS

In most provinces silvicultural prescriptions have necessarily been neglected during the war owing to the priority given to supply work,

THIS CONFERENCE RESOLVES THAT—

Detailed schemes to bring such prescriptions up-to-date are necessary in the provinces affected and the provision of the necessary finance and staff to implement them is essential.

WHEREAS

In most provinces the yield prescriptions of working plans have been departed from in many ways during the war owing to the heavy and continued demand for timber and fuel,

THIS CONFERENCE RESOLVES THAT—

(1) Every province affected should set up an efficient organisation to overhaul and rewrite all working plans as quickly as possible and the provinces should be asked to devote adequate funds for the preparation of the new working plans and for carrying them out even though these will necessitate heavy expenditure on increased cadres of officers and subordinate staff.

(2) These problems should be dealt with by a separate working plan circle.

WHEREAS

The demand for timber, firewood and minor forest products is continually rising it is essential that the future requirements of the consumers be known.

THIS CONFERENCE RESOLVES THAT—

The Senior Officers' Conference should be invited strongly to recommend that each province and state should start immediately to make a survey of quantities of timber, firewood and minor forest products likely to be required in the province or state within the next 25 to 30 years. This survey should also estimate what can be produced within the province and state and in the adjoining territories.

In the collection of this information and in the coordination of results obtained from it suitable public bodies such as the Utilisation Board, Chambers of Commerce, as well as industrial and agricultural interests should be consulted.

WHEREAS

War problems have necessitated immediate research into many forest problems.

THIS CONFERENCE RESOLVES THAT—

Joint investigations and tours to study the following subjects should be started as soon as possible :—

(a) Regeneration of fir forests (Punjab, N.W.F.P., Kashmir, Tehri-Garhwal).

(b) Efficiency of enumerations. (U.P., N.W.F.P., Punjab etc. etc.)

(c) Control and formation of sand drift. (Sind, Punjab, Madras and many States).

(d) Species suitable for the afforestation of arid and desert regions including the varieties of *Prosopis Juliflora*. (General problem).

(e) Regeneration of salai forests. (C.P., and Central India States).

(f) De novo regeneration of sal. (U.P., Assam, Bengal).

(g) Casuarina plantation technique. (Madras, Bombay, Orissa).

(h) Quick growing broadleaved trees of industrial value. (Punjab).

(i) Timber species suitable for dry areas with and without irrigation. (Sind, Punjab and N.W.F.P.).

ITEM 3.—COOPERATIVE SEED COLLECTION AND DISTRIBUTION.

WHEREAS

(1) The existing system of cooperative seed collection and distribution is unlikely to be adequate to meet the large demands for seed we anticipate in the immediate post war period.

THIS CONFERENCE RESOLVES THAT—

(1) Provinces and States should make their own seed arrangements if possible and only in cases of difficulty should refer their indents to the central silviculturist.

(2) Each province should have one authority (such as the provincial silviculturist) to deal with indents and that States should be asked to appoint similar authorities.

(3) Provinces and States when possible should prepare lists for expected seed crops and seed crop surpluses, for species likely to be in demand.

(4) Trained seed collectors should be employed by the provincial seed authorities for the collection of seed and preparation of forecasts, etc.

(5) In seed collection due regard should be paid to seed origin, race and form of trees, freedom from insect and fungal pests etc.

(6) It be recommended to the Senior Officers' Conference that the price of seed charged to other provinces should not exceed the cost of collection + 25 per cent.

(7) Importing provinces should establish seed testing stations when necessary.

(8) The attention of the Senior Officers' Conference should be invited to the danger of spreading local pests round the country and of importing new pests from abroad.

(9) The importance of teaching correct methods of seed collection in forest schools be brought to the notice of the Senior Officers' Conference.

(10) In order to collect information on seed pests provinces and States should be asked to send small samples of all infected seed to the F.R.I. together with a note on whether or not they consider the infection economically important.

ITEM 4.—THE EFFICIENCY OF ENUMERATIONS.

WHEREAS

(1) The general overfelling of the forests of India and in particular the felling of special sizes of selected species for war purposes has rendered it imperative that as soon as the war is over large scale enumerations be done in a number of provinces for working plan purposes in order to estimate war damage and remaining resources.

(2) Enumerations will also be necessary to provide for post war planning.

(3) The accuracy of enumerations is a matter of permanent importance.

(4) At present we have little or no information of the potential accuracy of current methods of enumeration.

(5) It appears probable that much useful information can be obtained fairly quickly by examination of existing data.

THIS CONFERENCE RESOLVES THAT—

(1) The central silviculturist be authorised to proceed at once with the examination of existing data to endeavour to give an indication as soon as possible of the probable accuracy of different methods and intensities of enumeration in different types of forest and terrain.

(2) Approximate information is needed quickly rather than a more detailed accurate complete research.

(3) The staff used for enumeration work should be of the highest quality available, and should receive extra remuneration.

(4) After the examination of this data a paper or leaflet should be written on the necessity for determining the precision of sampling enumerations.

ITEM 5.—NATURAL AND ARTIFICIAL REGENERATION OF TEAK. WHEREAS

(1) Although in dry teak forests there is usually no difficulty in obtaining natural regeneration from advance growth and coppice shoots, far greater difficulties are experienced in the moister types owing to uncertain germination, heavy seedling casualties, tending problems etc. These difficulties require further investigation and research.

(2) Different methods of artificially regenerating teak are practised in various provinces even under similar climatic conditions leading to the conclusion that wider experience would tend to the improvement in some, if not all, cases of provincial technique.

(3) The majority of provinces favour the undertaking of a combined joint tour of inspection of teak growing areas.

THIS CONFERENCE RESOLVES THAT—

A joint cooperative tour be undertaken as soon as conditions permit in order to study artificial and natural regeneration of teak, defoliator control, and management problems, especially those arising from the war, the whole subject to be written up at the end of the tour.

ITEM 6.—THE AFFORESTATION OF DRY AREAS. WHEREAS

(1) Zones of low rainfall cover two fifths of India.

(2) Much of the land in these dry zones is unproductive or only partially productive, and there are shortages throughout of fuel, fodder, and pasture.

(3) In the desert areas there is considerable sand movement which as in many other countries may damage more valuable lands, is not arrested.

(4) Vegetative cover is possible where the annual rainfall is as small as 6".

(5) Owing to increasing population the demand for small building timber, fuel for domestic heating and fodder and grazing for animals is continually rising and hence the satisfaction of these demands should be primary objects of management in such dry areas.

THIS CONFERENCE RESOLVES THAT—

(1) The attention of the senior officers' conference be invited to the importance and urgency of the afforestation of these dry areas—particularly the fixation of the desert—and the necessity for adequate action in the near future.

(2) Amongst the essentials that should have attention are (a) recruitment and training of the staff required to carry out operations. This staff will have to work in trying conditions and they must be well paid and properly housed.

(b) Provision of necessary funds. These will be large and should form part of post war reconstruction finance.

(c) Propaganda on a large scale to endeavour to obtain the cooperation of the local population.

(d) Legislation to give the necessary powers to enable the work to be carried out.

WHEREAS

All government lands are not already fully utilised.

THIS CONFERENCE RESOLVES THAT—

The attention of the senior officers' conference be invited to the desirability of recommending that canal, railway and roadside areas should be afforested and managed under working plans prepared by the forest department.

WHEREAS

Our present technical knowledge of dry areas is inadequate,

THIS CONFERENCE RESOLVES THAT—

Research be carried out in connection with—

(a) afforestation technique in the two rainfall belts 0 to 10" and 11" to 20",

(b) irrigated plantation technique,

(c) contour trenching to ascertain the best methods,

(d) mechanical means of soil and sub soil working,

(e) the relative merits and costs of live hedges and fencing particularly in connection with grazing areas. Attention is drawn to the experience with live fences and hedges already gained in Madras.

(f) the propagation of suitable species and varieties of species including exotics.

WHEREAS

The work so far done has shown that it will not be easy and difficult such as draught, white ants, frost, hares, grazing by animals including camels and goats, fungal and bacterial diseases, locusts, etc., are likely to occur.

THIS CONFERENCE RESOLVES THAT—

Experience gained should be carefully recorded and that every effort be made to surmount the difficulties experienced.

Finally

THIS CONFERENCE RESOLVES THAT—

The list of trees, shrubs and grasses that grow in low rainfall areas compiled for this conference should be published.

ITEM 7.—THE REVISION OF THE SILVICULTURAL RESEARCH MANUALS.

WHEREAS

(1) The fifth silvicultural conference emphasised the need for the early revision of the manuals and decided the general lines on which this should be done.

(2) The need for the revision of the manuals is even more urgent now than it was at the time of the last conference.

(3) The central silviculturist in his efforts at their revision has found it impossible to include all the required information on statistical methods in the experimental manual.

THIS CONFERENCE RESOLVES THAT—

(1) The central silviculturist be authorised to compile the "Silviculture Research Code" in three volumes to be called

Vol. I.—The experimental manual.

Vol. II.—The statistical manual.

Vol. III.—The yield, volume and stand table manual.

(2) Attention be again called to the importance and the urgency of the revision of these manuals.

ITEM 8.—GRAZING AND PASTURE RESEARCH.

WHEREAS

Grazing and its regulation are major problems in many parts of India,

THIS CONFERENCE RESOLVES THAT—

The resolution on item 11 of the 1939 conference be re-affirmed and at the same time stresses the importance of investigations concerned with direct utilisation and improvement of pasture through regulated grazing.

ITEM 9.—OUT OF PRINT PUBLICATIONS.

WHEREAS

The question has arisen of reprinting and/or revising certain silvicultural publications,

THIS CONFERENCE RESOLVES THAT—

(1) I.F.R. silviculture Vol. 5 No. 2 Teak plantation Technique be reprinted as soon as practicable.

(2) Fodder Trees in India be reprinted.

(3) I.F.R. silviculture Vol. 1 No. 1. A preliminary survey of the forest types of India and Burma be revised and republished as soon as practicable.

(4) Items 1 and 2 be given priority owing to their immediate post war value.

Resolved that the next Silvicultural Conference be held late in October or early in November 1946 and that this conference be a full conference to which representatives of the Indian States and neighbouring countries,—Burma, Ceylon, etc. be invited.

Item No. 2.—Effects of war on (a) Silviculture, (b) Working Plans and Management.

(Note by W. C. de C. Welsh, Utilization Conservator of Forests, Bombay Province).

(a) *Silviculture*.—Up to about the end of 1941 war had little and then only very local effect on silviculture. By the middle of 1942 the demand for timber had become so heavy that already in one Division of one Circle all available staff and labour had to be concentrated on war fellings and other works connected with war timber supply, and no plantation work could be undertaken that year except in one Range. As war fellings and other activities—sawmilling, storage, despatch etc.,—expanded, making still further demands on labour and staff, the area over which silvicultural prescriptions had to be put aside or undertaken only on a reduced scale increased. The effects, however, still remained local and confined to areas of greatest activity within a Circle or only within a Division. It is chiefly in one Circle (Southern) that silviculture has had in any large measure to go to the back ground, temporarily, in some Divisions Plantations here, cleanings there and thinnings elsewhere have had to be postponed or undertaken on a reduced scale, and elsewhere regeneration prescriptions could not be given effect to. Only in isolated instances is there anything on the credit side—certain areas overdue for thinnings were worked over for ballies and excess fellings in some High Forest areas are likely to aid natural regeneration of teak.

(b) *Working Plans and Management*. Shortly before the war a move had been made to accelerate revision of Working Plans most of which were due or overdue for revision. Some Plans were under revision when war started. The war delayed revision of most of these. It was possible to complete the revision of one Working Plan in the Southern Circle with special provision for war fellings and to continue, with the small staff that could be spared, with some other revision work.

1 Record of all war fellings is being kept.

Permissible yields were exceeded almost every-where where suitable material for war timber supplies existed in sufficient quantity. Increased timber supplies were obtained not only by advance fellings but also in some Divisions by reduction of prescribed girth limits. The excess fellings were chiefly of sound trees in the most accessible areas. Teak especially and the recognised good junglegrounds were in great demand. A number of species normally not marketable became in demand. The war fellings of these new species covered only the best trees in the more accessible areas. It is doubtful therefore if much advantage will have been gained and if demand for these species, then to be exploited from further afield, will continue after the war. The effects of war on Working Plans and Management have also been local and not spread evenly over a whole circle or even Division. Up to 1943-44 the excess volume over prescribed yields taken out during the 4 war years represents advance fellings of ;

less than 2 years for the Northern Circle.

less than 2½ years for the Central Circle.

less than 3½ years for the Southern Circle.

Average 2½

Note.—The Northern Circle excess fellings include heavy removals of Cyclone (1940) damaged trees.

Complete figures for 1944-45 are not yet available but assuming that the 1944-45 figures of volume are about the same as those for 1943-44, the excess volume for the five war years will represent advance fellings of

about 2 years for the Northern circle.

about 3 years for the Central circle. ;

about 4½ years for the Southern circle.

Average 3½.

The excess will not be as much as shown against the Northern and Central Circles as the peak has been passed in those two Circles, while the excess fellings in some Divisions of the Southern Circle, notably Kanara Northern Division, will represent a greater number of years advance felling than the Circle average given. It is chiefly in this Division that the heaviest excess fellings have been made of the best trees of the best species in the easiest areas.

War fellings for increased charcoal and firewood production for Civil and Military needs have also had some effect on Working Plan prescriptions and Management. Advance fellings have been made for these commodities too. These advance fellings, however, commenced at a later stage and have not yet had any significant effect. In one large fuel producing area in the Belgaum Division advance fellings will have no material effect at all except that the areas nearest to railhead are being exploited first. Many years ago the rotation which was 30 years had to be increased to 60 on the M. & S. M. Railway change over firewood to coal.

Item No. 2.—Disposition and discussion of effects of war on Silviculture and Working Plans and Management in the Province of Coorg.

by C.M. Kuskalappa, Chief Forest Officer, Coorg.

(a) *Silviculture*.—This Province has 517 square miles of reserved forests and approximately about 291 square miles of unreserved forests which are known as *Parvris*. These unreserves are so rich in timber that it has been possible during the 5 years of the war period ended 31-3-1944 to extract from these unreserves 169,151 c.ft. of timber meeting the demand from the Supply Department etc., as detailed below.

			c. ft.
1913-41.	..	..	28,798 "
1912-13.	..	..	37,381 "
1911-42.	..	..	39,773 "
1910-41.	..	..	21,622 "
1939-40.	..	..	41,650 "
			<hr/>
			169,151 c. ft.

The effect of the above fellingings will certainly be an increase in the growth of *lanthana* in these lands. Even before the war, *lanthana* was covering so much of these lands that the cultivator had difficulty in finding sufficient pasture for his cattle. As a result of the extensive fellingings, made for meeting the war demand, more of these lands will be covered with *lanthana* and the position of the cultivator will become worse, not only because of the inadequacy of pasture for his cattle but also because of the fact that these *lanthana* covered lands will harbour pig and other wild animals which destroy crops. Therefore as a measure of post-war reconstruction work it has been recommended that the forest department should undertake the eradication of *lanthana* from certain selected *parvris* lands and grow such species of trees in them as will keep out *lanthana* while permitting of the growth of grass and yield useful material to meet the requirements of the ryots.

As a result of the war, there is now great demand for Plywood timber. So there are going to be further extensive fellingings in these unreserves as well as in private lands and the problem of eradication of *lanthana* will have to be tackled seriously.

In Coorg, the reserve forests are all along the borders of the Province, whereas the centres of population are mostly in the middle. So it is not easy for the people to get their requirements of timber, pasture and other forest products. Hitherto most of their requirements used to be met from the unreserves and their own private lands, but as a result of the rise in price of all the products, both unreserves and private lands are so much denuded of useful produce that the people will not find it easy to meet their requirements in the post-war period.

As regards the reserve forests, up to end of March 1944 over 2 lakhs c ft. of timber have been extracted from all over the forests by fellingings, not silviculturally prescribed. As a result, more gaps are caused in the forests and these gaps will be covered by *lanthana*, which will not

permit of any regeneration or grass coming underneath it. It will also increase the danger from fire. Further, these fellings will effect the future annual yield.

As a result of war production, there was difficulty in getting labour to carry out the normal silvicultural operations; consequently up to end of March 1914, 1352 acres of plantations prescribed to be thinned were in arrears. This quantity is increasing by 200 acres every year.

(v) *Working Plans and Management.*—Working Plan prescriptions and Management have not been seriously upset as a result of the war as a big proportion of the demand for timber was met by fellings from the Paimaris and from the annual coupes. Only in the ghat forests, it was necessary to exploit over 792 acres in excess of the Working Plan prescription, and there is no further prescribed area to be worked. So hereafter certain areas left out as inaccessible will have to be worked to meet future demand. The working plan for the ghat forests is however due to be revised by 1917-48 and the question of prescribing further areas to be exploited will soon be taken up.

Item 3, on the agenda.

Exposition and discussion of post-war forest plans.—My report on the recommendations of the Policy Committee on Agriculture, Forestry and Fisheries, may be adopted for this purpose. (copy enclosed).

Letter No. C-1-938[44], dated 5-9-1914 from the Chief Forest Officer Coorg to the Chief Commissioner of Coorg, Mercara.

Ref.—Your U.O. No. 7387[162[44], dated 26-7-1914.

Sub.—Recommendations of the Policy Committee on Agriculture, Forestry and Fisheries.

I have to offer the following remarks from the point of view of the Forest Department.

While no doubt the recommendations are all unexceptionable I have to make the following general observations as regards their applicability to the conditions in Coorg.

Increasing the production of raw materials of industry.—Now large quantities of Burugu and Chhattuva timber are being extracted for the Match Industry and by the end of the war there will be very little of these timbers left. After the war I expect there will still be as much demand as now. This demand can only be met by making provision for the growing of these species. The same is the case with the Plywood timbers. As for the other well known timbers for which also there will be demand after the war, at present, there is provision only for growing teak. Provision may have to be made for the growing of other species as well.

Soil erosion, Forestry, land reclamation, etc.—In Coorg from the point of soil erosion and afforestation, there is not likely to be any problem to be tackled by the Land Utilisation Board.

Preservation of Forests in catchment areas.—In Coorg the catchment areas of streams are generally well preserved.

Control of grazing.—Pasture land in most parts of Coorg is inadequate nor is the condition of such pastures satisfactory as large proportions of such lands are under lantana. It may be necessary for the

Government to improve the pastures by the eradication of lantana, introduce species of trees or grass which will keep out lantana and introduce the rotational system of grazing in order to utilise the available resources to the best possible advantage. Better kinds of grasses may also be introduced. So far as the reserved forests are concerned, the grazing now available is not fully utilised and no kind of control seems necessary.

Preparation of revised Working Plans to ensure conservative management to repair the damage done by advance fellings during the war.

So far as the reserved forests are concerned there has not been any appreciable advance fellings. Most of the extra timber that has been extracted has come out from the unreserves. To compensate for this more regeneration operations may be undertaken in the reserved forests. As for the unreserves certain large blocks, suitably distributed may be utilised for growing the requirements of the local population in the matter of firewood and timber. The usual fellings and not of the nature of exploitation fellings the object of the fellings being to stock the forests better than at present, while at the same time, harvesting the timber on the land. Buruga and Chhattura are soon going to be felled all over the forests. Some kind of regeneration work will have to be done to compensate for the loss of stock caused by these fellings.

Protection of land to preserve climatic and physical condition etc.
Not applicable to conditions in Coorg.

Setting out a portion of forests for the use of ryots.—Excluding Devara Kadu, Coorg has as much as 33.1/3 per cent. of its area under regular forests. Also an appreciable proportion of the lands outside the reserved forests are covered with some kind of forest growth or other. The conditions of Coffee and cardamom lands are almost similar to forest lands and it may be said that as much as about 50 per cent. of the land in Coorg is actually under forest. The distribution of the forests is however not satisfactory. It may be necessary therefore in certain parts remote from reserved forests—to create ryots' forests, to meet the needs of the ryots.

Forests of low rainfall. Determining the areas in which timber can be grown, etc.—Selection of lands for growing ryots' forests have to be undertaken even though, no classification is necessary, as all land in Coorg is fit for growing timber, though in some cases not of very large dimensions.

Formation of soil conservation circle etc.—This seems hardly necessary for Coorg.

Appointment of an officer by Central Government to investigate the erosion problems.—Erosion is not a problem to be tackled so far as Coorg is concerned.

Powers to be taken by Government to exercise control of privately owned forests.—There are hardly any large blocks of private forests in Coorg, therefore this recommendation also is not applicable to Coorg.

Development of Industries for the utilisation of Minor Forest Produce.—Two possible industries are paper making and match industry, for both of which there are ample raw materials.

Training of Personnel to carry out the foregoing proposals.—No specially trained staff will be necessary for Coorg; but an increase of staff with the usual forestry training will be necessary.

At present the lower subordinates do not have any kind of training except what they get by experience. I think it will be advisable to depute a few subordinates periodically to one of the Vernacular Training Schools that the Madras Forest Department holds, whenever they feel the need for the same.

General tentative suggestions.—Firewood and grazing.—Even though Coorg has a very large area under forest, the distribution of the same is not satisfactory. Practically all the reserved forests are along the borders of Coorg, whereas the centres of cultivation and of population are mostly in the interior, away from the forests. Therefore there is difficulty in certain parts in getting firewood cheap and pasture available close at hand is not adequate. For example so far as firewood is concerned, the public in Mercara have to pay for their requirements even more than what people in Madras have to pay for their requirements even though firewood is transported to Madras over an average distance of about 150 miles. This is chiefly due to the high cost of transport in Coorg. Cost can probably be reduced if a railway line is taken through Coorg after the war. If not, I think it is up to the Government to create fuel plantations within easy reach of centres of population. As for the requirements of the rural population, some propaganda work may have to be done to make ryots grow suitable species of trees in their own lands. If necessary the Agricultural or the Forest Department may establish nurseries in suitable centres to supply seedling to the ryots.

As regards pasture, I consider the position as very unsatisfactory not only because in many parts, there is not sufficient extent of pasture land but also for the reason that a big proportion of the available land is under lantana. As a result Coorg has to buy every year thousands of buffaloes and bullocks for ploughing and milk supply is very inadequate. The position can be improved if the Government undertakes to eradicate lantana in all government lands and plant up those areas with species of trees or shrubs that will suppress lantana. The work will be costly, but in view of the fact that the government have realised huge amounts of revenue not only by the sale of trees from the reserved forests but also from the paisari forests, it is but right that some proportion of that revenue is spent on the improvement of the quality of these lands. Even if all paisari lands are improved the problem of pasture will, I think not be fully solved. Therefore, I think ryots should be encouraged to pen their cattle in the reserved forests where fodder is plentiful, for at least part of the year. For this purpose it will be necessary to classify all forest land into (1) land suitable for pasture (2) land for growing timber. The first kind of land will have to be managed primarily for the benefit of cattle. From such lands lantana will have to be eradicated and conditions made favourable for the growing of grass. Sheds may have also to be built for the housing of cattle and adequate water supply will have to be provided and precautions will have to be taken to prevent the outbreak of diseases. If this scheme does not appeal to the people, it may

be advisable to start cattle breeding by the Government or by Co-operative Societies.

If cattle are penned for some part of the year, away from the holdings of the ryots, there will be so much loss of manure for the ryots. This may have to be compensated for, by teaching and encouraging ryots to use green manure. So far as I have seen, Coorg is the only place where cultivation is done without the use of green manure and I think adoption of this practice of using green manure by ryots will have very beneficial results. After eradicating lantana from pasture lands, in order to suppress lantana, species of trees that will be useful for yielding green leaf manure can be grown.

Also in order to make the best use of the available pastures, it will be necessary to introduce the rotational system of grazing both in *paisaris* as well as in the reserved forests.

The Policy Committee have rightly laid much emphasis on the evil of burning cow dung in place of firewood. Luckily this practice does not prevail in Coorg and I believe practically all the cow dung is used as manure.

Transport Problem.—Forest and even agricultural produce of Coorg do not fetch proper values as they cannot be easily transported to the rail head. Some products like say bamboos, do not find a sale at all, even though elsewhere outside Coorg, bamboo is in great demand and fetches very good price. If a railway line is laid through Coorg, the revenue from the forest department can be increased considerably, by the export of bamboos and firewood and even other inferior woods which at present are worthless.

Cheap Electrical Power and Industries.—I believe it is possible to harness water power available in various parts of Coorg and generate electricity. If therefore electric power is made available at a cheap rate, forest industries, such as saw milling, plywood manufacture, paper-pulp making and match making can be started and full use can be made of the forest resources, while giving remunerative employment to hundreds if not thousands of people.

Exploitation of the Ghat forests.—Hitherto the Ghat forests, have not been properly exploited not only because, the demand for the species available there was negligible but also because a big proportion of the area is inaccessible. Now that there is great demand for practically all the species, including those that were considered worthless hitherto, for plywood manufacture, the question of opening up all the ghat forests by the construction of suitable roads will have to be investigated with a view to take whatever material is available there, either to the West Coast or to Mysore.

ITEM No. 3.—*Exposition and discussion of post-war forest plans.*

Post-war forest plans of the Central Government.

By. **SIR HERBERT HOWARD**, *Inspector General of Forests.*

The recommendations of the Central Government for post-war forest policy so far as they have advanced at present are contained on pages 42 to 45 of the "Second Report on Reconstruction Planning of the Reconstruction Committee of Council". These are based on the more detailed "Post-war Forest Policy for India" written by me. I reproduce below this portion of the reconstruction Committee's second report :

18. *Forests.*

"Figures published by the Economic Committee of the League of Nations in 1932 show that at that time the percentage of the total land area of the Great Powers of the Continent of Europe maintained under forest, either Government, corporation or privately owned, was 44 per cent. in the case of Russia in Europe, 24 per cent. in Germany, 20 per cent. in Italy and 19 per cent. in France. Among the lesser Powers the percentage of forest rose to 74 per cent. in Finland, 55 per cent. in Sweden, 38 per cent. in Austria and 34 per cent. in Czechoslovakia. The average of all the European powers including flat countries like the Netherlands (8 per cent.), Denmark (9 per cent.) and including also Great Britain (6 per cent.), was 26 per cent., with very varying distribution as between Government, corporation and private ownership. Though British India is shown as having 175,000 sq. miles (20 per cent. of her total area) under forests, Government or private, out of this area only 122,000 sq. miles (14 per cent. of the whole of British India) is Government forest and less than 100,000 sq. miles is under regular Forest Department management. Hardly less important, the distribution of forests in British India is far from ideal. Except for the Central Provinces, Bombay and Madras,—that is to say, roughly speaking north of a line from the Gulf of Cambay to Calcutta,—the forests under the Forest Department consist of a narrow strip in the north, in and along the foot of the Himalayas, the forests of Eastern Assam, the Sunderbans and some detached blocks down the Indus, in the south of the U.P. and in Orissa and Bihar.

2. The forests along the Himalayas are vital to India for many reasons, especially for the protection of the Ganges valley against the related dangers of erosion and flood; but the Ganges valley itself and indeed much of northern India plains are almost destitute of forests from which the villagers can draw fuel and small timber, while over much of Rajasthan and Sind and part of the Punjab the absence of forests is leading to a gradual desiccation of the country.

3. Considering the Indian climate and the general demands of the agricultural villagers, the minimum area of properly managed forests in India, properly distributed for protective purposes and to supply the general consumer and the village consumer, should be between 20 and 25 per cent. of the total area of the country, as against a nominal 20 per cent. under forests of all kinds at present and 14 per cent. for forests under Government control.

4. In the interest of the greatest good of the greatest number—a principle enshrined in the existing forest policy—Governments, Central and Provincial, will in future have to take a greater share in regulating the distribution, the management and the exploitation of India's forest wealth. A forest is a slowly maturing asset: there is little early return on the investment and the extension of the area under forest cannot with any confidence be left to private enterprise. Similarly as regards exploitation: not every owner, incorporated or individual, can resist the temptation to exploit this asset for a temporary gain at the risk of its early extinction, a result from which not only the owner but the countryside is the poorer in many ways. Private forests were steadily disappearing in India even before the war. Under the pressure of war needs and high prices private forests have in some instances been so overfelled as virtually to have disappeared. It will not be possible for Government to take up as forest all the land that is ideally necessary, in quantity and in distribution, to give India an adequate and properly distributed system of forests: nor will it be possible to interfere to the extent which a purely forest point of view would render desirable in the management of private forests: but to the extent that the general well-being of the country is involved, the time has come for an extension of the land under forests of one kind or another and for an extension of Government control over private forest management and exploitation.

5. With this background, the general correctness of which will probably not be disputed, the Government of India are examining a post-war Forest Policy based on the following salient points,—the rehabilitation of Government managed forests to compensate for advance fellings during the war: the campaign against erosion and the extension of afforestation, for its own sake and to make available fuel and small timber to the ordinary village agriculturist. The first of these is largely a technical matter and will presumably be taken up by Provinces and States as a matter of course. Of the matters calling for policy decisions, the most important aspect of post-war forest policy is correct land management to minimise run off, floods and erosion both inside and outside forest land and the afforestation, naturally or artificially, of the dry belt below the 30 in. rainfall line. The second, but almost equally important, problem is the provision of small timber and fuel for the "ordinary village agriculturist" free or at low rates, both to provide for his direct wants and to release cow-dung for manure. These problems are largely inter-dependent: to a large extent what solves the first helps to solve the second: to an even larger extent the solution of the second will help to solve the first. To these general ends a policy on the following lines is recommended,—

(a) Provinces should endorse and implement the existing forest policy laid down in Circular No. 22-F. of the 19th October 1894, with an addition, the need for which has become more fully obvious of late, that one aim of policy ought to be to increase the area under forest (and preferably under Government forest) up to the minimum requirements of the country.

(b) It should be laid down as the aim of each province to have 20 per cent.—25 per cent. of its area under forest and so distributed that the agricultural villager can obtain his needs for agricultural timber and fuel within a reasonable distance of his home.

(c) In particular the principle of a sustained and equal annual yield from forests, which has actuated the Indian Forest Department since its inception in 1865, should be endorsed. To uphold this, the working plan position should be carefully examined immediately after the war to rectify any overfelling. The possibility of introducing a special working plans circle, where such does not already exist, should be examined.

(d) The land in each Province necessary for the preservation of the general climatic and physical conditions (e.g. land subject to, or necessary for the control of, run off, floods, erosion or desiccation) should be defined and placed under proper management,—probably in many cases forest management.

(e) To attain this ideal control of private forests will be necessary in most provinces. A Private Forest Act to legalise such control should be drafted. The act should legislate for various degrees of control depending on local conditions, but where necessary it should permit full management of the forests by Government. The present powers under Chapter V of the Indian Forest Act XVI of 1927 are insufficient.

(f) In most Provinces the area of forest under Government control is less than the safe minimum of 20 per cent. In some provinces large areas are devoid of any properly managed forest land, and there the majority of the village population cannot obtain their requirements of small timber and fuel and, perforce, burn cowdung. But in all these provinces there appears to be plenty of scope for increasing the forest area up to 20 per cent. or 25 per cent. and land for this exists properly distributed for the wants of the agricultural villager.

The basis of all this work is a classification of the land on the lines of the tables for cultivated and uncultivated areas in the agricultural statistics of India. That classification, however, is not made from the forest point of view and there is no doubt that much of the land classed as "not available for cultivation" could in fact grow trees and, properly regulated, could provide for better grazing. The classification should show :—

Total area.

Cultivated area.

(i) Area actually sown.

(ii) Current fallow.

Forest land.

(i) Under the forest department.

(ii) Under other Government departments.

(iii) Private forest.

(iv) Mango groves, etc.

Uncultivated land (other than fallow) capable of growing fuel and small timber forests.

Uncultivated land not capable of growing fuel and small timber forests.

- (i) Urban areas.
- (ii) Roads.
- (iii) Completely barren areas.
- (iv) Railways, etc., etc.

Fuel and small timber can be grown on many areas often unproductive at present, like roadside land, canal banks, mango groves, railway land, etc., under quite short rotations of 15 years.

The above classification need not be particularly accurate for a start.

(g) The land management schemes decided upon must include the proper regulation of grazing. Excessive grazing is the cause of much land deterioration. Proper regulation increases the total available fodder and does not decrease it.

(h) The definition of the forest land recommended under (a) above, where land management must be such as to prevent floods and erosion, should be done for all other land in addition to forest land. It can be done concurrently with the classification of land recommended in (f) above. It is for consideration whether all Government land, the management of which is governed by the need to prevent run off and erosion, should be under the forest department. The answer to much of the flood and erosion problem in India is afforestation where possible together with proper control of grazing, or, at any rate control of grazing, where afforestation is impossible or undesirable.

(i) It is especially important to grow forests on a percentage of the desert or low rainfall areas where irrigation is available, and to extend proper forest management wherever possible throughout the low rainfall areas even where there is no irrigation. Forests can probably be grown without irrigation down to somewhere within the 10 in. to 15 in. rainfall belt.

(j) It is recommended that a soil conservation circle be formed in each province to deal with general land management and growing of trees in rural areas, whether it be to prevent run off, floods, erosion or desiccation or to supply the agriculturist with small timber and fuel. It is emphasised that, though it may take years before the full schemes are complete, the first results will be rapid. The full rotation of these minor forests will often be only 15—20 years and after 5 years the villagers will begin to get their first yield of fuel and grazing will be much improved. Where there is no serious frost, *Acacia arabica* (*babul* or *kikar*), is one of the most suitable trees except in very dry areas.

(k) It is recommended that the Central Government should appoint at once a Central Anti-Erosion Officer to investigate directly the problem of floods and erosion. He should be a forest officer working under the Inspector General of Forests. It may later be necessary to expand this to a full Central Soil Conservation service.

(l) The Central Government is taking up more actively the general research in regard to valuable Minor Forest Products, but it is recommended that provinces should themselves investigate the needs of all industries depending on Minor forest products within the province. The Burma Government has already sent an officer to the Forest Research Institute, Dehra Dun, to be trained for this work.

(m) It is recommended that each province set up a local forest committee to draw up a post-war forest plan and that representatives of these committees then meet to correlate those details of their separate plans which apply throughout India.

(n) It is recommended that provinces send their gazetted officers trained at Dehra Dun for a continental tour in Europe between their 2nd and 5th year of service. This recommendation is only a liberalisation of a policy already existing in regard to selected forest officers.

(o) It is recommended that a commission be appointed as soon as possible to enquire into the best organisation of the Forest Research Institute and that someone familiar with the internal working of the Institute and of the forest department in general be a member of this commission. The attention of this commission should be called to the present anomalous organisation of the Utilisation branch and to the need for a small central statistical branch to advise all branches on the design of experiments and to analyse the data recorded.

(p) The importance of training the Forester grade is emphasised and the Inspector General of Forests should enquire into the existing position though it appears to be generally satisfactory.

(q) The present training of rangers is satisfactory and should continue as at present. It would be preferable, immediately it is possible to move the Ranger College out to New Forest but the old Ranger College should not be disposed of till the exact demands after post-war expansion are known.

(r) The Forest Research Institute should expedite investigation into the very valuable Minor Forest Products.

(s) It is recommended that the Central Government see that the release of Defence Department timber stocks after the war is controlled by the Disposal Board and that the forest department is adequately represented in any planning for such disposal. In connection with this it is also recommended that in consultation with railways steps should be taken to stabilise sleeper prices after the war.

1. The foregoing, though written primarily from the viewpoint of British India, is applicable almost in its entirety to the Indian States.

2. It will be noticed that the above recommendations deal with what I may call ordinary forests and forestry on one side and on the other side with forest research and forest education.

3. With forests and forestry in general the Central Government must await the plans of the individual provinces and these it is presumed will have been forwarded for record of the Senior Forest Officers' Conference in so far as they have already progressed.

4. The Central Government has very little actual forest country under its control. The forest plans for Coorg will be prepared by Coorg, these for the North-West Frontier Province by the N.W.F. Province, these for Baluchistan by Baluchistan and those for Ajmer by Ajmer presumably on the advice of the United Provinces Forest Department. The N.W.F. Province, Baluchistan, and Coorg all have properly constituted forest departments. Baluchistan had till now an insufficient forest department and its post-war policy can be summed up very shortly by saying that it proposes to reorganise the whole of its forest department and its forest policy more or less from the start.

5. Only the Andamans are really the direct concern of the Central Government in the ordinary sense of the word. Obviously very little can be said about the future forest policy of the Andamans until the Andamans are retaken. What may be said, however, is that complete plans for the reopening and reestablishment of the Andamans forests and forest department have been drawn up and that the forest policy will be to reopen the Andamans forests and the forest industry as quickly as possible with up to date sawmills and machinery aiming at an immediate target of 72,000 tons a year which is considerably more than the past yield and aiming at an eventual yield of probably 150,000 tons a year which the forests are perfectly capable of yielding. Naturally all depends on what the Japanese have done to the forests but it is thought that they cannot have inflicted any very material damage.

6. *Forest Research.*—Paragraph 5(o) above recommends the appointment of a commission to enquire into the working of the Forest Research Institute. Before the arrival of that commission one step in the reorganisation which did not affect the Institute as an Institute, has already taken place. The posts of Inspector General and President which had been combined and held by one man since 1926 have now been separated. There is now an Inspector-General of Forests stationed at Delhi and a President of the Forest Research Institute stationed naturally at Dehra Dun.

7. The second internal reorganisation is also being made. The present Utilisation Officer and his Assistant are being abolished as such and in their place a Liaison Officer is to be created whose chief function will be to keep the forest departments, industry and trade, and the Forest Research Institute mutually in touch. It will be noticed that this function is very largely what the Utilisation Officer was meant to do for utilisation in particular but which is now extended to the whole Institute. This Liaison Officer will be a forest officer of some considerable experience. This is written before final sanction for this post has been received but it appears likely that it will be sanctioned before this conference meets. Meanwhile, there is the minor matter of the Assistant Utilisation Officer's post being replaced by a Personal Assistant to the new President.

8. The Utilisation Officer in the past was not a technical expert in any of the many sections under him. The real reorganisation taking place therefore, after making the old Utilisation Officer a general Liaison Officer, is to divide the large and unwieldy Utilisation branch into two

parts, giving each part a technical head. Timber Testing, Wood Workshops, Mechanical Engineering and Wood Technology will form a branch of Constructional Engineering with a professional Constructional Engineer at its head, while Paper Pulp, Wood Preservation and Wood Seasoning will form a second branch of Chemical Engineering with a professional Chemical Engineer at its head. This will bring the organisation of the Utilisation branch into exact parallel with the organisation of the rest of the Institute where in each case the branch has a technical expert responsible for the technical accuracy of the work at its head.

9. In addition to the above main reorganisation a Statistical branch for the whole Institute is likely to be created, while the office and budget of the Utilisation branch, which had been separate until now, will be centralised with all the other branches under one main office.

10. The whole will be under the administrative control of the President, Forest Research Institute.

11. Other minor internal rearrangements are forecasted but need hardly be mentioned as such changes may occur at any time. It is, however, likely that Wood Technology may eventually be moved to the Botany branch and that the post of Ecologist at present in abeyance in the Botany branch will be transferred to the Silviculture branch.

12. *Forest Education.*—Since the second report on Reconstruction Planning was written, education has advanced further than was then foreseen. The Inspector General has already enquired into the training of Forester grade recommended in paragraph 5(p) above. The training and plans for future training are satisfactory and his report to the Government of India on this was forwarded to the Heads of all Provincial Forest Departments on January 11, 1945.

13. The recommendation in paragraph 5(u) above that gazetted officers trained at Dehra Dun should make a continental tour in Europe between their 2nd and 5th year has already been accepted by provinces for a percentage of such officers.

14. But a considerable advance has been made already in the Central Government's post-war plans for the education of Rangers and gazetted officers at Dehra Dun itself. Approximately facilities for training both Rangers and gazetted officers at Dehra Dun have been doubled and the new buildings should be complete for these increased classes to commence by the time the conference meets. The main college buildings will not have been completed but the living quarters should be ready and the main buildings sufficiently forward for the colleges to work in. It will only be after the debate on item 4 of the conference that exact calculations for the future can be made. As I shall be dealing with these calculations under the next item on the agenda, I propose to say no more here. To control forest Education generally (there will from next year be always 6 classes in residence, nearly 200 students) a post of Education Conservator has already been created for one year in the first instance.

15. *Minor Forest Products*.—The Central Government has already started on the expansion of the Major Forest Products section of the Chemistry and Minor Forest Products branch. At the time of writing this it has reached the stage that a Minor Forest Products sectional officer has been appointed. He has drawn up a comprehensive report for organising the section and the report is being considered. Meanwhile, a preliminary forecast for financing this has been sent to the Planning and Development Department of the Government of India.

16. At the present stage I can say little about paragraph 6 above, namely the post-war forest policy of Indian States. What I can say, however, is that the post-war plans of the States are likely to be a great advance on the past. The demands for seats in both the Rangers and the gazetted officers colleges of this Institute prove conclusively how much more interest is being taken in forestry than in the past. Speaking very approximately it is a fact that the demands for seats for rangers from States are about as much as half the total demand of provinces and for gazetted officers as much as 20 or 20 per cent.

17. The above gives a general outline of the Central Government's general recommendations for forestry as a whole and what it is doing in particular and combined with the action of provinces it should form a more or less complete record of future plans.

S HOWARD,
Inspector-General of Forests.

OFFICE OF THE CONSERVATOR OF FORESTS, ASSAM.
No B.244.

From

H P. SMITH, Esqr., I F.S.,
Senior Conservator of Forests,
Assam.

To

The PRESIDENT,
Forest Research Institute and Colleges,
New Forest P. O.,
Dehra Dun.

Dated B'along, the 6th March 1945.

SUBJECT:—Senior Officers' Conference.

Ref.:—Government of India, Department of Education, Health and Lands,
No. F 22-23(3)-F. & L., Dated the 16th November 1944.

2(a). Effects of the War on Silviculture.

The war has surprisingly not had very much effect on the creation of plantations and taunryas, a steady average of 2 000 acres having been created yearly. In some divisions there are signs of neglect due to labour difficulties but the lack of labour has had a good effect in that previous too early spacing and thinnings has been stopped and complete weed control obtained.

This too early thinning has resulted in far too accelerated growth as the following examples show:—

Teak planted in 1922 has an average girth of 4 ft. 6 in.

Hollock plantations in Sadya give a girth of 3 ft. 8 in. in 19 years.

Work in assisted natural regeneration has progressed well on a less scale but very good results have been obtained in evergreen and sal areas. In Kuchugaon P.B.I. areas full regeneration has been established in 5 years enabling the overwood to be removed.

Large nurseries are now being formed in all divisions ready for extensive regeneration as soon as labour becomes available and prices go down.

2(b). Annexure 'A' gives the outturn from 1938-39 to 1943-44. From all sources during the past four years we have cut and extracted 60,000 tons excess annually of timber in the round which is 50 per cent. more than the average of pre-war years. Similarly for firewood the outturn has increased during the past two years by about 100 per cent.

Due to difficulty in road and rail transport felling has been more concentrated in certain divisions particularly Lakhimpur, Sibsagar and Nongong with a view to prepare such areas for regeneration.

Prescribed plantation areas have been worked over in advance and where formerly we used to fell and burn we now obtain a large revenue from timber, ballies and firewood. In one division we are getting a revenue of about Rs. 40,000 from such areas which before the war was a complete loss. Even during the war in this Division we are replanting at the rate of 400 acres per year.

Many formerly unmarketable species are also being felled and sold and it is doubtful if we can find a market for most after the war.

The removal of ballies has improved the forests to a great extent.

Actually the only Divisions which are ahead of Working Plans to any real extent are Lakhimpur where the greatest Military demands had to be met on the spot and Maltugaon where regeneration has not kept pace with the prescriptions of the Plan.

3. Annexure 'B' gives our post war reconstruction plan which it may be noted is required in addition to the normal budget and which aims at more reservation in the Hills where our percentage is dismally low—about 1 per cent, intense regeneration to a scale commensurate with the area of Reserved Forests, revision of working plans with forest industry as a background for Management proposals, creation of a training school for Foresters, the construction of roads and the comfort and health of the staff and forest workers.

In this connection there are areas in the Frontier Tracts of Lakhimpur which if Reserved will more than carry on Lakhimpur until regeneration replaces excess fellings.

4. Schedules have been drawn up which are now before Government to reorganize the subordinate forest staff; to increase the numbers of Rangers and Deputy Rangers and incidentally to give a better scale of pay (as schedule C). This will be sanctioned in this present budget session of Council. These schedules base recruitment and training on a 28 years basis to attain the regularity lost by non-recruitment between 1932 and 1940. We are not increasing the quantity but the quality.

5. The standards at present should be maintained. The need for waving qualifications will pass as education (and a liking for forest work) develop. The qualifications are in Schedule D.

6. It is necessary that many posts at Dehra Dun should be reserved for Provincial Officers. The numbers should be revised and Provinces be asked to have a definite number of India List posts on their cadres for this purpose with the right to call for these numbers from Provinces. A rotation of officers from Provinces to Dehra Dun would help in understanding each others problems especially when such officers are apparently too busy to visit Provinces as the only visits Assam has had since 1936 are —

Inspector General of Forests	..	..	1936
Wood Technologist	..	..	1940
Assistant Entomologist	..	..	1940
Dr. Bagehee	..	..	1945

Incidentally we gave Prof. Tanaka from Formosa a good tour round the Assam Hills in 1938 and Japanese plans for the war must have been greatly helped!

7(a). The posts of officers in charge of schools may be added. Really senior officers should be in their provinces or be qualified for present listed posts. There will also be quite a few "passed over Conservators" available due to Provincialization of this grade. The listed posts are:—

Forest Botanist.
Forest Economist.
Silviculturist.
Forest Zoologist, and
Forest Chemist.

In my opinion this next below rule gives encouragement for officers to stay perpetually at Dehra Dun and not give other deserving officers a chance.

Copy to:—

1. The Chief Conservator of Forests, Punjab.
2. The Chief Conservator of Forests, C. P.
3. The Chief Conservator of Forests, Bombay.
4. The Chief Conservator of Forests, Madras.
5. The Chief Conservator of Forests, Bengal.
6. The Conservator of Forests, Bihar.
7. The Conservator of Forests, Orissa.
8. The Conservator of Forests, N. W. F. Province.
9. The Conservator of Forests, Sind.

8. The Inspector General of Forests to the Government of India. 20 spare copies have been sent to Dehra Dun as you are in difficulties in cyclo-styling *vide* your No. Dis. 45-DFC of the 23rd January 1945.

9. The Chief Secretary to the Government of Assam with reference to my No. B-244 of the 15th December 1944, your No. GFR. 200/44/3 of the 5th December 1945. As I am far too busy to attend please permit the Junior Conservator of Forests to attend in my place. I regret I am unable to spare the time to attend but I am kept here with very important timber supply questions.

(Sd.) H. P. SMITH,

Senior Conservator of Forests, Assam.

ANNEXURE A.

	Timber in rough logs.	Timber in rough poles.	Sawn timber.	Miscel- laneous.	Fuel.	Bamboo.	Cane.	Thatch.
	In thousand cft.	In thousand cft.	In thousand cft.	In thousand cft.	In thousand cft.	Value Rs.	Value. Rs.	Value. Rs.
<u>1938-39.</u>								
Reserved Forests	2,682	80	608	2	2,495	41,448	22,712	7,489
Unclassed State Forests ..	2,231	106	555	280	5,810	25,589	1,00,387	22,017
Shared Forests	91	47	1	..	129	1,818	..	586
TOTAL ..	5,004	323	1,064	291	8,441	68,854	1,23,099	30,991
<u>1939-40.</u>								
Reserved Forests	2,201	88	762	4	1,895	57,004	24,071	7,548
Unclassed State Forests ..	2,791	190	480	308	5,068	31,809	65,229	41,785
Shared Forests	126	4	..	1	92	1,021	..	600
TOTAL ..	5,118	292	1,182	313	7,042	92,404	79,300	52,593
<u>1940-41.</u>								
Reserved Forests	3,093	93	890	5	2,203	59,833	38,233	7,008
Unclassed State Forests ..	3,021	216	907	70	6,100	41,777	86,430	26,850
Shared Forests	94	16	..	2	143	1,492	2	607
TOTAL ..	6,808	375	1,887	77	8,506	1,06,102	1,24,674	35,545
<u>1941-42.</u>								
Reserved Forests	3,281	99	694	12	2,040	72,720	42,002	7,800
Unclassed State Forests ..	3,421	521	923	96	5,061	47,136	1,00,118	40,435
Shared Forests	54	91	..	..	106	1,959	..	654
TOTAL ..	6,756	611	1,617	108	7,207	1,21,815	1,42,120	48,889
<u>1942-43.</u>								
Reserved Forests	2,490	1,385	1,387	14	3,751	1,46,971	45,740	10,912
Unclassed State Forests ..	1,867	198	486	23	6,120	62,762	63,663	50,033
Shared Forests	31	7	..	..	145	1,208	11	357
TOTAL ..	4,388	1,591	1,873	37	10,016	2,37,041	1,39,414	61,898
<u>1943-44.</u>								
Reserved Forests	2,857	293	1,631	171	3,098	1,71,041	1,02,700	25,490
Unclassed State Forests ..	2,988	603	574	292	11,518	94,864	16,004	1,16,412
Shared Forests	33	5	7	..	89	709	..	54
TOTAL ..	5,878	1,061	2,212	463	15,003	2,66,614	2,09,694	1,41,956

ANNEXURE B.

U.O. No. B-45, dated Shillong, the 5th December 1944.

Post War Reconstruction Commissioner, U/O.

Referring to our discussion, I submit herewith our 15-year plan divided into first 5 years and subsequent 10 years.

SCHEME NO. I

STATIONARY PLANTATION.

First Five Years.

		Ru
1. Yearly extension of areas by 100 acres and upkeep at Rs. 75,000 per year	Recurring	3,75,000
2. Provision for a Factory and Equipment	Non recurring	2,21,000
3. Factory costs	Recurring	75,000

Subsequent 10 Years

1. Yearly extension of plantation by 100 acres including upkeep at Rs. 75,000 per year	Recurring	7,50,000
2. Factory Equipment	Non recurring	70,000
3. Factory costs	Recurring	1,00,000
	Total	18,00,000

At the end of this period the Scheme should be self supporting.

SCHEME II.

First Five Years

1. Provision of a Forester's Training School for the training of at least 15 officers per year	Recurring Non recurring	1,50,000 50,000
2. Revision of Working Plan with special attention to the fullest regeneration of the total area of forests to provide for present and future industries	Recurring	2,00,000
3. Survey and constitution of new areas for protection, Production and Local Needs Reserved forests including the cost of training officers in anti erosion work, full agriculture and surveying.	Recurring	3,00,000
4. Regeneration of Reserved Forests on an increased scale to produce a future maximum yield per acre by the taungya method as far as possible at least an increase of 5,000 acres per year	Recurring	6,00,000
5. Reconstruction of huts, buildings and the construction of new required buildings	Recurring	1,50,000
6. Improvement and construction of new roads to reduce extraction cost and to ensure easy inspection especially of plantations and regeneration	Recurring	4,00,000
7. Development of forest villages and taungya villages with a view to having permanent employed labour for willing to dig and up in forest work a supplementary means of livelihood	Recurring	1,50,000

		Rs.
8. Development of sanitation of forest buildings and provision of a good water supply	Recurring	1,00,000
9. Development of the Goalpara Trainway. New Engines, rails for extension and a possible change of terminus from Lakragram to Sapitgram are part of this proposal	Recurring	1,00,000
<u>Subsequent Ten Years.</u>		
1. Provision of a Forester's Training School for the training of at least 16 officers per year	Recurring	1,50,000
2. Revision of Working Plans with special attention to the full-cost regeneration of the total area of forests to provide for present and increased future industries	Recurring	3,00,000
3. Survey and constitution of new areas for Protection, Production and Local Needs Reserved forests including the cost of training officers in anti-erosion work, hill agriculture and surveying	Non recurring	3,75,000
4. Regeneration of Reserved Forests on an increased scale to produce a future maximum yield per acre by the rungya method as far as possible at least an increase of 2,000 acres per year	Recurring	11,50,000
5. Reconstruction of Kutcha buildings and the construction of new required buildings	Non-recurring	1,50,000
6. Improvement and construction of new roads to reduce extracting cost and to ensure easy inspection especially of plantation and regeneration	Non recurring	3,30,000
7. Development of forest villages and townships with a view of having a permanent contented labor willing to depend upon forest work as a supplementary means of livelihood	Non-recurring	1,50,000
8. Development of sanitation in forest buildings and provision of a good water supply	Non-recurring	50,000
9. Development of the Goalpara Trainway. New engines, rails for extension and a possible change of terminus from Lakragram to Sapitgram are part of this proposal	Non-recurring	50,000
	Total	50,00,000

Construction of buildings as asked by you has already been provided under item No. 5 under Scheme No. II.

If any priority is to be given; it is item No. 1, 4 and 3.

The Scheme covers the whole province and not any particular area.

(Sd.) R. N. LEE,
Conservator of Forests, Assam.

SCHEDULE A.

Proposed new staff against old staff of the Forest Department, Assam.

Service.	cadre of old staff.	cadre of proposed new staff	Scale of Pay.	
			Junior scale	Senior scale.
1. Class I ..	27	29	(1 C. I. 13-14) 200 210 225 235 250 270 275 275 290 300 310 320 330 340 350 360 370 380 390 400 410 425 450 475 500 525 550 575 600 625 650 675 700 725 750 775 800 825 850 875 900 925 950 975 1000 1025 1050 1075 1100 1125 1150 1175 1200 1225 1250 1275 1300 1325 1350 1375 1400 1425 1450 1475 1500 1525 1550 1575 1600 1625 1650 1675 1700 1725 1750 1775 1800 1825 1850 1875 1900 1925 1950 1975 2000 2025 2050 2075 2100 2125 2150 2175 2200 2225 2250 2275 2300 2325 2350 2375 2400 2425 2450 2475 2500 2525 2550 2575 2600 2625 2650 2675 2700 2725 2750 2775 2800 2825 2850 2875 2900 2925 2950 2975 3000 3025 3050 3075 3100 3125 3150 3175 3200 3225 3250 3275 3300 3325 3350 3375 3400 3425 3450 3475 3500 3525 3550 3575 3600 3625 3650 3675 3700 3725 3750 3775 3800 3825 3850 3875 3900 3925 3950 3975 4000 4025 4050 4075 4100 4125 4150 4175 4200 4225 4250 4275 4300 4325 4350 4375 4400 4425 4450 4475 4500 4525 4550 4575 4600 4625 4650 4675 4700 4725 4750 4775 4800 4825 4850 4875 4900 4925 4950 4975 5000 5025 5050 5075 5100 5125 5150 5175 5200 5225 5250 5275 5300 5325 5350 5375 5400 5425 5450 5475 5500 5525 5550 5575 5600 5625 5650 5675 5700 5725 5750 5775 5800 5825 5850 5875 5900 5925 5950 5975 6000 6025 6050 6075 6100 6125 6150 6175 6200 6225 6250 6275 6300 6325 6350 6375 6400 6425 6450 6475 6500 6525 6550 6575 6600 6625 6650 6675 6700 6725 6750 6775 6800 6825 6850 6875 6900 6925 6950 6975 7000 7025 7050 7075 7100 7125 7150 7175 7200 7225 7250 7275 7300 7325 7350 7375 7400 7425 7450 7475 7500 7525 7550 7575 7600 7625 7650 7675 7700 7725 7750 7775 7800 7825 7850 7875 7900 7925 7950 7975 8000 8025 8050 8075 8100 8125 8150 8175 8200 8225 8250 8275 8300 8325 8350 8375 8400 8425 8450 8475 8500 8525 8550 8575 8600 8625 8650 8675 8700 8725 8750 8775 8800 8825 8850 8875 8900 8925 8950 8975 9000 9025 9050 9075 9100 9125 9150 9175 9200 9225 9250 9275 9300 9325 9350 9375 9400 9425 9450 9475 9500 9525 9550 9575 9600 9625 9650 9675 9700 9725 9750 9775 9800 9825 9850 9875 9900 9925 9950 9975 10000	(D C I. 13-14).
2. Rang. I. ..	49	80	Ranger I (12) Ranger II (18) Ranger III (42)	R. 175-5-220 R. 110-5-16 R. 82-2/3-102-105
3. Deputy Rangers ..	78	112	R. 56-2-68-71-2-77	
4. Foresters ..	103	127	R. 40-1-50	
5. Head Guards ..	..	100	R. 7-1-40	
6. Guards ..	543	413	R. 20-3-25-1-70	

SCHEDULE B.

Minimum qualifications for Rangers' Course and Superior Course :-

1. *Rangers' Course*.—Intermediate examination of any recognised Indian University with one or more of the following subjects —

Mathematics, Physics, Chemistry, Botany, Zoology or an examination of an equivalent or higher standard.

2. *Superior Course*.—Applicants must be B.Sc. graduates and should possess a thorough knowledge of English and Mathematics. A knowledge of Natural Science is also desirable. They must have passed the I.Sc. examination in either Botany or Zoology.

ITEM No. 3.—*Exposition and discussion of Post-War Forest Plan by P. R. Sabharwal, Conservator of Forests, Bihar.*

Management of the upper watershed of the Damodar river (Chotanagpur).

The Damodar Flood Enquiry Committee recently appointed by Government of Bengal as a result of the discussion came to the conclusion that the proper management of the catchment area must form an essential part of any scheme which may eventually be adopted for the control of floods in the Damodar. I was requested subsequently to prepare a rough estimate of cost for the management of the watershed in question. I have at present no definite data on which to base such an estimate. In order to prepare a scheme it is necessary that the watershed should first be examined with a view to study the local conditions. It is only then that a proper land plan can be drawn up. The area does not consist of hills and forests only but there are extensive stretches of waste and cultivated land also. Each type of area needs its own plan. For the purpose of this note I will assume that some 3,000 sq. miles of this watershed will be put under the control of the Forest Department. It may be more or it may be less. The exact area can only be known after a detailed survey. The following operations will be necessary in this area according to local conditions :—

- (1) Regulation of cutting.
- (2) Regulation of grazing.
- (3) Afforestation and planting.
- (4) Contour trenching and ridging, gully plugging, etc.

I believe most of the forest area in the catchment of the Damodar is owned by private people. There is at present no legislation to compel the private owners to manage their forests in any particular way. It might be pointed out that a very small measure of success has been attained in persuading some of the owners to apply under section 38 of the Indian Forest Act. Some of the private forests have already been reserved. Briefly the terms are that the owners agree to lease their forests for about 40 years, Government pay the cost of management and a very small annual rent of one or two annas an acre together with half the share of the profits. This means that the owner will be certain of a small rental from the forests (in many cases the owners received no income from their forests in the past) that he will incur no expenditure, and that as the forest improved he will get something more in the form of a share in the profits. Before the forests are taken over by Government they are reserved under the Indian Forest Act and the interests of the *riyats* are secured by a forest settlement which settles definitely what their rights are, and the forest settlement sees that these rights are secured to them. It might be mentioned that though we have got some forests under this arrangement we have not so far been able to persuade many owners of forests lying within the watershed of the Damodar to lease their forests for management by Government on the above terms. It is of course preferable to take these forests under section 38 but experience extending over many years has shown that this method is not going to prove effective. A Bill entitled the 'Bihar Private Forest Bill' has been pre-

pared. It is now under the active consideration of the Government of Bihar. The objects and reasons of this Bill are :—

"It has been universally accepted that the preservation of forests is essentially necessary in the public interest and particularly in the interest of the peasantry. Government have been taking steps to preserve the forests which are their own property, but Government forests form a very small proportion of the total forest area of the Province.

The bulk of the forests which lie in Chotanagpur belongs to private persons, and they are being rapidly denuded by both landlords and tenants. The consequences are becoming more serious every year. The land from which the forest is cleared is nearly always unfit for cultivation; the soil is rapidly washed away leaving bare rock; springs, wells and tanks dry up, cultivation is adversely affected and the climate itself changes for the worse. In the plains, floods become more severe owing to the denudation of the catchment areas.

With a view to preserve such private forests Government adopted the policy of persuading landlords to apply under section 38 of the Indian Forest Act, 1927 for the preservation or protection of their forests under the provisions of that Act, but the response so far has been very disappointing, and Government are convinced that the preservation of these private forests is not possible until the necessary legislative measures are undertaken empowering Government to take over suitable private forests for management as protected forests. This Bill is intended to achieve this end.

The provisions of Chapter II are intended to ensure that the rights of right-holders recorded in Khatian Part II, in respect of forests in villages are exercised in a reasonable manner. It is hoped that the simple restrictions imposed on the exercise of such rights will assist in prolonging the life of the forest.

Chapter III provides for the taking over of suitable forests by Government for management as private protected forests on the terms and conditions laid down therein. Provisions have been made reserving to the landlord necessary and reasonable facilities even while the forest is under Government management and for the payment to him of the net profits on the working of the forest when they accrue.

Provision is made for refunding to a contractor who has taken a licence of a forest of any sum still reasonably due to him either in cash or in timber, etc., extracted in accordance with the instructions of the Forest Officer."

The Government of Bihar have agreed to take over the management of the catchment area as soon as the Bihar Private Forest Bill becomes law.

2. *Improvement in the growing stock.*—The productivity of the forests is in many cases very low compared with what the land might be producing. We could hardly expect anything better from the forests which had been heavily worked and were semi-ruined when the Forest Department took them over. But with careful tending many of them

have now been converted into vigorous crops and the yield in some has gone up by 10—20 per cent. and even more. Much, however, still remains to be done. Intensive silvicultural work will therefore be necessary for which more money will be required. The full value of returns will not be felt for several years. It is, however, our duty to posterity to ensure that the forests as a whole are brought to a state of maximum productivity as quickly as possible when the expenditure on research and silvicultural work will be repaid hundred-fold. The silvicultural operations consist mainly of cleanings and thinnings. The necessity of carrying out these operations has been accepted by all who practice forestry. As with animal population continued healthy existence and progress is only possible in tree crops with adequate sanitary measures involving the removal of individuals and of the causes of disease and the conditions favourable from propagation and spread. It is possible that crop diameter at 100-year rotation can be raised by at least 30 per cent. over the existing outturn figures by suitable thinnings. This increase is progressive. In addition to this increased production we will be improving sanitary conditions and keeping away insects, fungi and other injurious factors from the forests. It will therefore be necessary to provide additional funds for the attainment of these objects.

3. *Development of minor forest products.*—The Forest Department has prepared an extensive list of medicinal plants found in the forests of Bihar but of which neither the quantity nor the pharmaceutical values are known. It is necessary to have a precise data, the quantity and quality of raw materials, their exact location, the transport facilities, *vis-a-vis* area, and the cost of production of such raw materials. In order to collect this data it is essential to have the services of an Economic Botanist to carry out the necessary survey of our forests in order to determine the quantity and quality of medicinal plants and other minor forest products which are found in the forests. It is difficult to say how long the services of the Economic Botanist will be necessary to complete such a survey but it is doubtful if he can finish this work in less than two or three working seasons. The question of the survey is so important that it is hoped that Government will see their way to depute this officer for this purpose. It will be realised that the industrialist before he will invest capital would like to know what are the quantities available and where they are available. He would not be satisfied if he is told that large quantities are available in our forests. It seems therefore essential that we should have a complete survey of our forests before we can induce any industrialists to invest money in the industrial development of the medicinal herbs and other minor forest products which may be found in our forests.

4. *Improved methods of extraction and exploitation.*—There are fair weather roads for extraction of forest produce which are mostly impassable in the rains. They are narrow and the alignment of most of them could be greatly improved. They are with few exceptions not fit for mechanical transport and the loaded bullock and buffalo carts ply with some difficulty. There are some areas where even fair weather roads are absent.

Whenever communications have been improved the value of forest produce has at once gone up. It must not be forgotten that sound forestry is the resultant of the two equally important components—Silviculture and Utilisation. Elementary economics teaches us that production by itself is not enough and that distribution and utilisation are equally important. Motor vehicles are playing increasing part in the extraction of forest produce and our bridges which were meant to carry a cartload are not strong enough to carry 2-ton lorry loads nor are most forest roads fit for plying motor trucks. Motor transport, I have no doubt, will help to develop our forests to a great extent. Carriage under present conditions is undoubtedly one of the limiting factors to the proper utilisation of forest produce over long leads or in hilly tracts and in consequence on the costs of production and sale. Additional funds will be necessary for the improvement of communications in future.

5. *Water transport.*—Floating has proved itself to be the cheapest means of transport. In Finland logs are floated some distances of 500 miles at an incredibly low cost and millions of logs are so transported annually from forests to the mills at sea-ports. It is therefore necessary that the rivers and streams flowing through or in the neighbourhood of the forests should be examined with a view to make them fit for floating forest produce. It will only be then that the forests will be fully developed. The most important rivers which concern us are the Karo, the Koel and the Subarnarekha. The Koel scheme is under the consideration of Government and it is suggested that steps should be taken to explore the possibility of making use of the Karo and the Subarnarekha for floating the forest products.

It is suggested that an engineer should be deputed to examine the possibilities of floating timber and bamboos in the Karo and the Subarnarekha. It will not take him more than two years to examine and prepare the necessary schemes. The conversion of these rivers even along small stretches into navigable streams will give the people living in this locality lines of communications where hardly any exist now. It will therefore help to develop the countryside. I have no hesitation in saying that the provision of better means of extraction will in some cases help to raise our receipts from the sale of forest produce by 50 per cent. or so.

6. *Match Industry.*—There are distinct possibilities for establishing this industry in Bihar. The difficulty in initiating this industry lies in the fact that suitable woods in sufficient quantity are not available. It is expected that if the Forest Department can guarantee the supplies in commercial quantities of woods which have proved to be suitable for matches there is every hope of establishing a flourishing match industry in Bihar. The species which are considered suitable for this purpose are known and it only requires to raise plantations of the same. We know how to do it but funds are required to put this scheme into effect. It will be necessary to survey our forests to find out the extent of area fit for planting species suitable for making matches.

7. *Protection from fire.*—The areas in which for various reasons adequate fire-protection has not been possible or has been imperfect cover

a very large percentage of our forests. Although the Department has fought hard against the enemy fire, the measure of success has been poor. The fires are responsible for incalculable damage. Fires will not only kill large trees but burn back acres of young saplings and regeneration, in addition there is unknown damage to the growth increment and physical resistance of the trees not actually killed. The annual fires that take place therefore constitute one of the most serious menaces to sustained crop condition and the arrangements made for protection so far have provided an inadequate means of check.

It is difficult to estimate the damage done in terms of cash but I think it will be quite safe to say that if we could protect our forests against fire the yield from our forests will go up by 20—25 per cent.

8. *Health and housing accommodation for the subordinate forest staff.*—Health in the forest areas is very unsatisfactory particularly in respect of malaria and to a less extent of dysentery. There are numerous interdependent factors that are responsible for this condition but primarily it arises from the endemic incidence of malaria and dysentery with the local villagers, unsatisfactory housing and the arrangements for water supply, and the difficulties of obtaining essential foods to maintain a hard physical standard. It is unlikely that much can be achieved to reduce the disease incidence of local villagers till a higher standard of education has been arranged from which a better appreciation of hygiene and medical treatment will develop. On the other hand much could be done for the general health standard of the executive and subordinate staff by (1) the provision of more houses particularly rest-huts which should be specifically designed, constructed, and sited to guard against the prevalent high forest humidity and mosquitoes, (2) the sinking of pucca wells at all camps sites where arrangements will be made for their regular use, (3) the establishment and maintenance of a number of regular vegetable gardens and the enhancement of the daily travelling allowance to enable the executive staff to meet the peculiar local difficulties of providing suitable foods and milk that are so necessary, (4) the adequate supply of mosquito nets and warm jerseys to the lower paid subordinate staff. If such provisions had been made it is reasonable to assume that there would have been an appreciable drop in the service and funds lost to Government from sickness and medical leave. Medical facilities in these forest areas are naturally limited and likely to remain so and their distribution will not be adequate to meet the needs of the staff and labour in such unhealthy and exacting surroundings. It is suggested that the Department should arrange for some form of mobile dispensaries that could better keep in touch with local needs and the circumstances involved.

9. *Proposals for the formation of timber, fuel and grazing reserves for the agriculturists in Bihar.*—The whole of the forest areas under the management of the Forest Department is confined to the hilly tracts of Chotanagpur far removed from the thickly populated parts not only of Chotanagpur but also from the whole of Bihar proper. On account of the inaccessibility of these forests vast majority of the people or the cattle never go near them and for them these forests might not exist. Outstanding points connected with the lack of forests within easy distance of the most populous districts are the enormous waste of the only source of cheap manure

by burning cowdung, called attention to by Dr. Voelcher so long ago as 1853 and again dealt with by the Royal Commission of Agriculture in 1928, the low standard of village dwellings largely because there is no cheap wood available and the high price of forest produce. It is no use trying to transport the forest material to the plains. It is not an economic proposition.

2. The vast amount of cowdung is burnt every year in Bihar. I have collected some figures which are admittedly rough and based on some assumptions to show the amount of dung which is produced and burnt in Bihar annually.

3. The following statement shows the number of cattle according to the census of 1910 :-

		Bulls and bull calves	Cows.	Calves.	Buffalo bills	Buffalo cows.	Buffalo calves.
Patna Division ..	..	1,015,518	5,27,819	5,21,671	57,133	3,96,371	2,91,197
Tirhut Division ..	..	1,111,166	7,04,423	6,25,007	11,777	4,81,773	2,81,801
Bhagalpur Division ..	..	1,773,010	1,112,777	1,553,437	1,40,009	3,35,423	2,66,703
Chota Nagpur Division ..	..	1,353,951	1,020,021	8,50,703	3,12,831	1,54,012	1,47,923
Bihar ..	..	5,354,697	3,749,832	3,127,812	5,41,153	1,770,581	9,77,223
Grand Total ..	..	..	..	..	18,155,317	..	..
or say ..	..	..	..	..	15,533,000	..	..

I understand that the average dry weight of cowdung produced per head per day is 10 lbs. or for 15,500,000 about 25 million tons a year. I will assume that the following quantities of cowdung out of the total quantity produced in each division is burnt every year :-

Patna—1½; Tirhut—3½, Bhagalpur—1½; Chotanagpur—1½.

If the whole of this cowdung was available for manurial purposes there is no doubt therefore that the yield from land could be raised considerably. I understand there are proposals for the manufacturing of chemical manures. I have nothing to say against these proposals. They are excellent but I feel that our first duty is to secure the cowdung for the land.

4. The only solution to this problem is to grow forests in the plains near the villages. This can be done by the better management of all uncultivated land, Government and private forests, roadsides and canal banks and possibly even setting aside a small proportion of existing cultivation for village plantations. The railway lands could also perhaps be utilised for this purpose to a certain extent.

5. The greatest need for the fuel and fodder plantations is in North and South Bihar and I suggest the work should therefore be commenced there as indicated below :-

A.—Government lands.

(a) All State forests and uncultivable waste lands which are not under the Forest Department should be made over to the latter for management. Most of these waste lands are probably scrub forest uncultivable and ravine lands which under suitable treatment can be converted to fuel or grazing reserves.

(b) Canal plantations and roadsides

The object of management of canal and roadside avenues should be as follows :—

(a) Shade for travellers,

(b) Bank-protection,

(c) Production of timber, and firewood required by Government for departmental purposes and for sale to the public.

The aim will therefore be to produce even-aged and homogeneous stretches of avenues which will afford shade and at the same time yield timber and fuel.

These avenues are a great credit to those who were responsible for raising them. These avenues are very often the only trees visible in otherwise treeless country. It is unfortunate that these avenues have not been properly maintained. There are extensive blanks and the avenues are everywhere breaking up now.

I suggest that all the Government canal plantations and more important of the roadsides both Government and District Boards should in future be managed by the Forest Department with the objects stated above.

B.—*Private lands.*

(a) Every attempt should be made to take as much area of private forests as possible under control. The enactment of Bihar Private Forest Bill into law will greatly facilitate this work.

(b) The plantations on private lands should either be undertaken by the landlords or tenants as the case may be. I would, however, like to mention that I tried this in Chotanagpur but without success. I hope we will have better results in North and South Bihar.

This question will be considered only when we have work on Government lands well in hand. The distribution of tree seeds and plants from the forest nurseries will, however, be given to those who may be interested in raising plantations on their own land. The tenants should be encouraged to plant trees and seeds supplied free from the Government forest nurseries on their holdings by the award of suitable rewards in cash if necessary.

C.—*Waste-lands.*

There are two methods of raising plantations on waste lands. First one and which is the common method is to plant up departmentally. This is an expensive way of raising plantations and will probably cost Rs. 25/- to Rs. 30/- per acre. The other is the introduction of *taungya* method.

6. The area of North and South Bihar (excluding Santal Parganas) is roughly 12,000 and 24,500 sq. miles respectively. It is extremely difficult to give any figure of what the percentage of forest land in a country should be. Considering our climate and the general demands of the agricultural villagers, it is likely that this figure might be taken as a rough minimum—say 20 per cent. This should be considered as the minimum

area of properly managed forest and properly distributed for the supply of timber, fuel and grazing requirements of the villagers and the general public. On this basis the area under forest should be about 2520 and 4900 sq. miles in North and South Bihar respectively. It will not be necessary to make up the whole of this area by new plantations. There are large and small stretches of forest belonging to Government and private landlords. They must also be brought under proper management. The total forest area will thus consist of—

(1) Existing forests—

Whether private or state owned.

(2) Government canal and road-side plantations and avenues.

(3) Plantations on Government waste lands.

(4) Plantations on private lands.

A statement showing a rough classification of the area in each district is appended to this note. It will be seen that there are 32,200 sq. miles of what are called 'Waste lands' in all the districts. I have not been able to ascertain the ownership of these 'Waste lands'. Most of this area, I believe, belongs to the private owners. In any case these figures do indicate the great possibilities of making use of these 'Waste lands' which exist in Bihar. Even if 30 per cent. of these 'Waste lands' are converted into timber, fuel and grazing reserves at suitable places, the problem of fuel and grazing will be solved to a great extent. It is suggested that a Committee consisting of a Revenue Department Officer, an officer of the Agricultural Department and Forest Officer should be appointed. This Committee should investigate the possibilities of reclaiming these waste lands and select areas suitable for the production of fuel, fodder or grazing reserves. The selected areas should then be made over to the appropriate department for management. This should be done immediately in the case of waste lands belonging to Government.

7 It is suggested that for the present two Forest Divisions should be created, namely one in North Bihar and the other in South Bihar.

There is already a proposal to create a forest division in South Bihar with headquarters at Monghyr for the management of certain Private Estate Forests. Another division in North Bihar with headquarters at Muzaffarpur or some other suitable centre should also be created.

NOTE.—The position of forest on the plateau of Chotanagpur has not been discussed in this note. The management of forests in this area has been discussed in a separate memorandum "Management of the Upper Watershed of the Damodar" forming part of the proceedings of the third meeting of the Agricultural Committee of the Post-War Reconstruction Board on the 9th May 1944.

The total area of forests under the Forest Department the continued existence of which can be guaranteed is only 2019 sq. miles and its percentage to the total of the province is as follows :—

South Bihar—1 per cent.

North Bihar—Nil.

Chotanagpur—6 per cent.

Total—3 per cent.

Name of districts in Bihar.	Total area in sq. miles.	20% of total area which should be under forest (sq. miles).	Total area under cultivation of all kinds (sq. miles).	Total area under forest (sq. miles).	Total area of waste lands (sq. miles).	Remarks.
1	2	3	4	5	6	7
Patna ..	2,164	433	1,491	..	671	The waste lands (Col. 6) comprise jungle, grazing grounds and lands not under cultivation. These belong either to Government, Public bodies and private owners. These areas will have to be analysed by the collectors concerned in regard to ownership and the proposed committee vide para. 7 will classify these areas for purpose of creating timber, fuel and grazing reserves.
Gaya ..	4,788	953	2,840	11	1,903	
Shahabad ..	4,468	892	2,764	..	1,874	
Monghyr ..	3,470	715	2,732	..	1,631	
Bhagalpur ..	4,218	843	2,032	..	1,110	
Farrukh ..	4,893	1,000	2,073	..	2,065	
Bansga Parganas ..	5,450	1,090	2,661	29	2,534	

SOUTH BIHAR ..	30,030	6,008	17,057	303	12,670	
Baran ..	2,660	532	2,121	..	519	
Champaran ..	3,553	711	2,152	..	1,01	
Muzaffarpur ..	3,025	605	1,770	..	1,246	
Darbhanga ..	3,343	669	2,468	..	879	
NORTH BIHAR ..	12,604	2,510	8,520	..	4,074	
Haori Singh ..	7,016	1,403	1,662	84	5,280	
Ranchi ..	7,159	1,432	3,648	103	3,400	
Palamu ..	4,901	980	1,216	240	3,136	
Manbhum ..	4,131	826	1,367	14	2,750	
Singbhum ..	3,905	781	2,017	1,25	633	
CHOTANAGPUR ..	27,112	5,422	9,908	1,710	15,498	
GRAND TOTAL ..	89,715	13,940	35,585	2,013	32,241	

Percentage of the forest areas to the total areas.

South Bihar	..	..	..	..	..	1 per cent.
North Bihar	..	..	..	..	..	Nil.
Chotanagpur	..	..	..	..	..	6 per cent.
Total	..	..	..	..	..	1 per cent.

* Includes private forests held under lease by Government.

Financial.

The Government have as a result of these proposals agreed provisionally to allot the following funds:—

Forest.	Normal provision	Additional funds allowed by Government for Post-war projects.	
		Recurring.	Non-recurring.
Forest ..	Rs. 7,00,000	Rs. 7,00,000	Rs. 27,00,000

ITEM No. 3.—*Post-war forest plans—(Note by W. C. de C. Walsh, Utilisation Conservator of Forests, Bombay.)*

The post-war forest plans of Bombay are contained in the Government of Bombay's publication "Post-war reconstruction Planning in Bombay Province"—printed at the Government Central Press, 1941.

They are briefly :—

Scheme No.	Scheme.	Estimated cost in lakhs of Rs.		
		(Capital)	Recurring	Total
58	Forest Rehabilitation .. ..	.. ..	1.11	5.53
59	Communication	8.11	.. ..	8.11
60	Forest landings, wells, etc.	11.00	.. ..	11.00
61	Improvement of denuded areas	22.10	1.75	23.85

These plans are for execution during the First Five-Year Plan of the 15 Year Plan for postwar development of the Province being prepared by the Government of Bombay. The 4 schemes were intended originally to be taken up after the war. It has since been decided that the proposed Working Plans Division for the Northern Circle be constituted immediately and that the Divisional Forest Officer, Working Plans Central Circle be relieved immediately of the additional post he has hitherto held, the additional charge being filled by the appointment of a Sub-Divisional Forest Officer.

The duties of these two Divisional Forest Officers Working Plans have been clearly defined and include the collection now of data for areas to be taken over from the Revenue Department for the proposed new Divisions of Ahmednagar and Ratnagiri Districts.

Two other schemes for execution within the first five-year plan of the Province which closely affect the Forest Department are to be undertaken by the recently created Land Improvement Department under the Agricultural Department. They are :—

Scheme No.	Scheme.	Estimated cost of 5 year plan in lakhs of Rs.		
		Capital	Recurring	Total
61	Land Development and improvement (acacia areas)	4,71.37	1,38.85	6,10.22
62	Do (heavy rainfall areas)	21.30	9.00	30.30

For these two schemes of the Agricultural Department the Forest staff under the land improvement department has to deal with trenching, bunding and afforestation in all land development projects. Elsewhere, e.g., in forests hitherto under the Revenue Department and in areas where rotational grazing is to be undertaken, the Forest Department has to execute these works. Government waste lands which form the upper slopes of land development projects are to be handed over to the Forest Department after they have been contour-trenched and re-afforested by the Land Improvement Section and have become fully established.

It will be seen therefore that the Forest Department's share of Post-war development is not limited to the at-first-sight small contribution (50 lakhs) of the 4 schemes enumerated in sub-para. 1 above.

Of the 4 wholly Forest Department schemes, *Scheme 58*—Rehabilitation—provides for enumeration and revision of Working Plans on a yield basis to compensate for excess timber taken out for War supply, and also, if fuel shortage continue, for planning for increased fuel yields from forests not exploited or only partly so. This scheme includes the creation of a Working Plans Circle and a Working Plan Division in each Circle.

Scheme 88 provides for the improvement of denuded and eroded areas in forest proper and in forests in charge of the Revenue Department which are to be returned to the Forest Department and possibly for some afforestation of waste lands. This scheme extends over eight districts and includes the creation of two new forest divisions.

No. 1652/44.

Dated the 12th March, 1945.

From

J. M. SWEET, Esqr., I.F.S.,
Conservator of Forests,
Bellary Circle, Madras.

The PRESIDENT,
Forest Research Institute and Colleges,
Dehra Dun.

Ref.—Senior Forest Officers' Conference.

Sir,

I send herewith copies of 12 schemes (in brief) which have been submitted to the Forestry Sub-Committee and Post-War Reconstruction in the Province. These schemes have all been accepted in principle, but much detail still remains to be discussed.

In particular, no concrete proposals for increased pay and prospects for future entrants have yet been formulated (*Scheme 12*).

2. As regards item 2 of Agenda. There has been no substantial departure from silvicultural principles or from working plan—prescriptions in this Presidency. A large part of the additional supplies of timber and fuel that we have been called on to produce have come from forests normally considered inaccessible for economic working. *Scheme 6* is intended to deal with such dislocation of normal working as has occurred.

Item 4.—I enclose extracts from Chief Conservator's note to Forestry Sub-Committee on Post-War Reconstruction.

Item 5.—It is considered important to raise not only the pay and prospects of the Officers and Rangers Cadres, but also their Status. Though in individual cases desirable candidates may be excluded by the prescribed standard, any reduction of educational qualifications would have an adverse effect on the status of the cadre as a whole.

I have no additional items to suggest.

I have the honour to be,

Sir,

Your most obedient servant,

(Sd.) J. M. SWEET,
Conservator of Forests, Bellary Circle.

I.—SPECIAL PRIORITY SCHEMES.

(1) *Serial No. of Scheme.*—Scheme No. 1.

(2) *Name of Scheme.*—Reopening of the Madras Forest College.

(3) *Brief description of scheme.*—The schemes which follow involve increasing the cadre of Rangers from its present strength of 154 to 391 in the next ten years. This means recruiting and training about 25 men annually. When the cadre has been built up the annual intake to replace wastage will be about 19 men annually. There is certain to be demand from neighbouring States, etc., which would make up an annual class of suitable size permanently. It also seems certain that with most provinces and states expanding their Forest Departments the Dehra Dun Ranger College will not be able to meet our needs.

The Madras Forest College was closed in 1939. Its buildings, now used for other purposes, are likely to be available soon. Suitable retired and serving officers can be found as instructors.

(4) *Areas selected for application.*—Coimbatore.

(5) *Time expected to be taken for execution.*—It should be possible to re-open the College in July 1945.

(6) *Staff required.*—Four Gazetted Officers, a small subordinate and menial staff, and a small clerical staff. The Gazetted Officers can be found from serving and retired officers.

(7) *Rough estimate of cost :—*

(i) Capital—Nil.

(ii) Recurring.—Rs. 75,000/- annually.

(8) *Extent to which the scheme would be productive.*—Nil.

(9) *Extent to which the scheme will cater for returned personnel.*—If suitable applicants forthcoming, up to 25 annually. They would presumably be mainly officers of highly qualified clerical staff.

(10) *General description of plant, etc.*—Nil.

(11) *Labour Force.*—Nil.

(12) *Whether assistance of Central Government is required for obtaining materials, machinery or personnel.*—No.

(13) *Brief indication of further development in succeeding 5-year periods.*—The scheme will continue indefinitely on the same scale.

(14) *Any other remarks or information.*—

(1) *Serial No. of Scheme.*—Scheme No. 2.

(2) *Name of Scheme.*—Management of Panchayat forests.

(3) *Brief description of scheme.*—Out of a total of 15,000 square miles of Reserved Forest in the province an area of about 3,000 square miles was, some 20 years ago, removed from the control of the Forest Department and placed under management by village panchayat. The

system is now generally admitted to have been a failure and with the present strain on firewood resources the rate of denudation, always very serious, has been greatly accelerated. The proposal is therefore to restore these forests to departmental management.

(4) *Areas selected for application.*—All panchayat forests scattered throughout the province.

(5) *Time expected to be taken for execution.*—Transfer to departmental control should begin at once (without waiting for the end of the war) It could be effected within a year.

(6) *Brief details of staff required and how staff is proposed to be obtained.*—

1 Conservator.	} Gazetted officers.
5 District Forest Officers.	
30 Rangers.	
90 Foresters.	
250 Forest Guards.	
250 Watchers.	
76 Clerical establishment.	
85 menials.	

The staff will be found in the first instance by promotions from the next lower category in the case of the upper ranks and by direct recruitment of the others.

(7) *Rough estimate of cost at existing rates.*—

(i) Capital.—Nil.

(ii) Recurring.—Rs. 5,00,000/- annually.

(8) *Extent to which the scheme will be productive.*—The scheme will produce an annual revenue of Rs. 3,00,000 against an annual expenditure of Rs. 5,00,000 in the initial stages, but as the efforts of professional management develop the scheme should be self-supporting. It is primarily a 'Social Service' Scheme.

(9) *Extent to which the scheme will cater for returned personnel.*—Up to the maximum of the staff shown under (6) above, depending on the numbers of suitable war-service applicants.

(10) *General description of plant, equipment or stores.*—Nil.

(11) *Labour force required in the case of the larger schemes.*—Nil.

(12) *Whether the assistance of the Central Government is likely to be required for obtaining materials, machinery or technical personnel.*—No.

(13) *Brief indication where applicable of further development contemplated in the time of the scheme in succeeding five year period.*—The scheme will continue indefinitely on the same scale.

(14) *Any other remarks or information.*—

II.—ALL PROVINCE SCHEMES.

(1) *Serial No. of Scheme.*—Scheme No. 3.

(2) *Name of Scheme.*—Soil Conservation Circles.

(3) *Brief description of scheme.*—The Government of India policy committee recommended the formation in each province of Land Conservation Circle to deal with the special protection and land management of important catchment areas and with the question of erosion. The Forestry Sub-Committee of this Province have, I understand, accepted the proposal in general. It also accepted the principle that these duties should be undertaken by the Forest Department. This scheme is therefore for the setting up of the necessary organisation. It has been discussed at some length in my notes placed before the Forestry Sub-Committee and need not be elaborated here.

(4) *Areas selected for application.*—Not applicable.

(5) *Time expected to be taken for execution.*—One Soil Conservation Circle will be formed at once. A second in the second 5-year post-war period.

(6) *Brief details of staff required and how staff is proposed to be obtained.*—

In the first 5-year period :—

88 Gazetted Officers (including 1 Conservator).

28 Rangers.

140 Foresters.

140 Watchers.

80 Clerks.

89 Peons.

(7) *Rough estimate of cost at existing rates.*—

(i) Capital.—Nil.

(ii) Recurring—Rs. 4,00,000 in first 5-year period increasing to Rs. 8,00,000 in the second period.

(8) *Extent to which the scheme will be productive.*—Nil "a social service".

(9) *Extent to which the Scheme will cater for returned service personnel.*—Up to the maximum of the staff shown under (6) above depending on the number of suitable war-service applicants.

(10) *General description of plant.*—Equipment of stores.

(11) *Labour force required in the case of the larger schemes.*—

(12) *Whether the assistance of the Central Government is likely to be required for obtaining materials, machinery or technical personnel.*—Nil.

(13) *Brief indication where applicable of further development contemplated on the lines of the scheme in succeeding five-year periods.*—A Second Circle will be formed in the second 5-year period. Ultimately it is likely that the organisation will develop into a separate department.

(14) *Any other remarks or information.*—

(1) *Serial No. of Scheme*.—Scheme No. 4.

(2) *Name of Scheme*.—Control of Private Forests.

(3) *Brief description of scheme*.—There are about 4,000 square miles of private forests in the Province. Most of this is under no form of management other than reckless exploitation, which coupled with uncontrolled shifting cultivation has brought the greater part of it to a state of denudation which endangers the public good. Legislation to compel proper management, or to enable the estate to manage on behalf of the owner is under consideration. It will however, probably be necessary to acquire outright a very considerable proportion of these forests, and this would be a very appropriate purpose to which to devote a part of the large net surplus of revenue over expenditure now being obtained by the Forest Department. This net surplus will total between 200 and 500 lakhs by the end of the war. The matter has been discussed at length in my note for the Forestry Sub-Committee. The matter has not reached a stage at which proposals can be made in detail, but it is clear that if the matter is taken seriously four new forest divisions will be required. The extent and cost of requisition can only be guessed at this stage.

(4) *Areas selected for application if applicable*.—Largely in Malabar but not exclusively.

(5) *Time expected to be taken for execution*.—The new forest divisions in the first post-war five year period and two more in the second.

(6) *Brief details of staff required and how staff is proposed to be obtained* :—

In the first five year period :—

2 Gazetted Officers.

12 Rangers.

36 Foresters.

100 Forest Guards.

100 Watchers.

28 Clerks.

32 Menials.

(7) *Rough estimate of cost at existing rates*.—

(i) *Capital*.—For the acquisition of private forests of special importance for conservation in catchment areas and for timber supplies of national importance. Rs. 1,00,00,000 spread over 2-post-war five year periods.

(N.B.—The war time profits of the Forest Department will total between 2,00,00,000 and Rs. 3,00,00,000).

(ii) *Recurring*.—Rs. 2,00,000 annually for the first five year post-war period increasing to Rs. 4,00,000 in the next five year period.

(8) *Extent to which the scheme will be productive*.—The scheme will yield a gross revenue of about Rs. 1,25,000 annually in the first instance, against Rs. 2,00,000 expenditure annually. Ultimately it will be self-supporting. It must be regarded largely as a "Social Service."

(9) *Extent to which the Scheme will cater for returned service personnel*.—Up to the maximum of staff shown under (6) above depending on the number of suitable war-service applicants.

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- (10) *General description of plant, equipment or stores.*—Nil.
- (11) *Labour force required in the course of the larger schemes.*—Nil.
- (12) *Whether the assistance of the Central Government is likely to be required for obtaining materials, machinery or technical personnel.*—Nil.
- (13) *Brief indication where applicable of further development contemplated on the lines of the scheme in succeeding five-year periods.*—Two more (i.e., 4 in all) divisions will be required in the second five-year period.

(14) *Any other remarks or information.*—

- (1) *Serial No. of scheme.*—Scheme No. 5.
- (2) *Name of Scheme.*—Further Forest Reservation (including village forests).

(3) *Brief description of schemes.*—The introduction of Forest Management in the Rampa Agency is overdue. There is scope also for further reservation on a considerable scale in the Vizagapatam Agency and on a smaller scale in the Kollimalais and elsewhere.

The shifting sandy banks of such rivers as the Nagari and Penneru cry out for afforestation, both for protection against wind erosion and sand drift and for local firewood supplies. The Government have already reserved considerable areas in a belt along the proposed Tungabhadra main channels for afforestation when the Tungabhadra project comes into being.

The question of creation of village forests from "uncultivable waste" as recommended by the Simla Policy Committee was discussed by the Forestry Sub-Committee of this province, but was deferred for further consideration. The Sub-Committee was inclined to doubt the necessity and practicability of wide-spread measures of the kind. It seems certain however that substantial developments of this kind in certain dry tracts will be necessary. A survey by the Revenue Department of available land is in progress. At this stage it is impossible to go into more detail.

Tank bed Babul, notably in Tinnevely and Ramnad provide most valuable "ready-made" village forests on a small scale. They are subject to abuse, amounting to total disappearance in some cases, and should come under proper management, as local forest, by the Forest Department. It is understood that the Forestry Sub-Committee has accepted this view.

These activities have been discussed at length in my note for the Forestry Sub-Committee.

Taken together they will require the formation of 5 forest divisions with 31 Revenue, and for the administration of these coupled with the divisions proposed in scheme No. 4 an additional Conservator and his office establishment will be needed.

- (4) *Areas selected for application if applicable.*—Not applicable.
- (5) *Time expected to be taken for execution.*—Will be spread over 4 post-war five-year periods.

(6) *Brief details of staff required and how staff is proposed to be obtained :—*

For the whole scheme the following :—

- 6 Gazetted Officers, including one Conservator.
- 31 Rangers.
- 93 Foresters.
- 262 Forest Guards.
- 262 Watchers.
- 79 Clerks.
- 87 Menials.

About one quarter of these will be required in the first 5-year post-war period. They will be obtained by promotion initially, in the case of the higher ranks, and by intake of trained recruits as these become available. The lower ranks will be obtained by direct recruitment.

(7) *Rough estimate of cost at existing rates :—*

(i) *Capital*.—Rs. 20,000 (some acquisition of sandy-river banks in private lands will be necessary).

(ii) *Recurring*.—Rs. 1,60,000 in the first five-year period increasing by an equal amount in each of the next five 5-year periods.

(8) *Extent to which the scheme will be productive*.—The scheme is primarily of the nature of a social service. In the first 5-year post-war period it will produce revenue of about Rs. 50,000 against expenditure of Rs. 1,60,000, but it will ultimately be largely self-supporting.

(9) *Extent to which the Scheme will cater for returned service personnel*.—Up to maximum of staff shown under (6) above depending on number of suitable war-service applicants forthcoming.

(10) *General description of plant, equipment or stores*.—Nil.

(11) *Labour force required in the case of the larger scheme*.—Nil.

(12) *Whether the assistance of the Central Government is likely to be required for obtaining materials, machinery or technical personnel*.—Nil.

(13) *Brief indication where applicable of further development contemplated on the lines of the scheme in succeeding five-year periods*.—The scheme will reach its full developments in 4 post-war periods.

(14) *Any other remarks or information*.—

(1) *Serial No. of Scheme*.—Scheme No. 6.

(2) *Name of Scheme*.—Working Plan Circle.

(3) *Brief description of scheme*.—The Working Plan Circle was re-trenched in 1939. The need for the best possible organisation to revise working plans as rapidly as possible after the war-time dislocation of normal working, and for the preparation of working plans for the panchayat Forests to be resumed under scheme No. 2 is too evident to need detailed comment. The necessity has been accepted by the Forestry Sub-Committee.

(4) *Areas selected for application if applicable*.—Not applicable.

(5) *Time expected to be taken for execution.*—In the first post-war 5-year period. It will continue indefinitely.

(6) *Brief details of staff required and how staff is proposed to be obtained :—*

- 6 Gazetted Officers, including one Conservator.
- 15 Rangers.
- 50 Foresters.
- 12 Clerks.
- 30 Peons.

(7) *Rough estimate of cost at existing rates.*—

- (i) *Capital.*—Nil.
- (ii) *Recurring.*—Rs. 1,60,000.

(8) *Extent to which the scheme will be productive.*—The scheme is for proper forest management. It will not be directly productive.

(9) *Extent to which the scheme will cater for returned service personnel.*—To maximum of staff proposed in (6) above, depending on number of suitable war-service applicants.

(10) *General description of plant, equipment or stores.*—Nil.

(11) *Labour force required in the case of the larger scheme.*—Nil.

(12) *Whether the assistance of the Central Government is likely to be required for obtaining materials, machinery or technical personnel.*—Nil.

(13) *Brief indication where applicable of further development contemplated on the lines of the scheme in succeeding five-year periods.*—

(14) *Any other remarks or information.*—

(1) *Serial No. of Scheme.*—Scheme No. 7 (revised).

(2) *Name of Scheme.*—Extension of Casuarina Plantations.

(3) *Brief description of scheme.*—The general position regarding future firewood supplies has been dealt with in some detail in my note placed before the Forest Sub-Committee. The conclusion reached in the note is that the present programme of 4,000 acres a year is sufficient to ensure the Madras City firewood supply but that further planting on a moderate scale tentatively put at 1,500 acres a year will be necessary elsewhere to relieve local shortage.

The Sub-Committee considered that planting on a very large scale should be undertaken to provide charcoal to be used in due course for a Sulphate of Ammonia factory at Bezwada. Requirements are stated to be 150 tons a year. To produce this will require plantations of 7,500 acres annually on a ten-year rotation—or 75,000 acres in all.

Further, the Sub-Committee considered that firewood in large quantities would be required, in addition to estimated future supplies of coal for expanding industries, even when normal movement of coal becomes possible after the war. It also held that firewood plantations on

an extensive scale would minimise the consumption of cow-dung as fuel, with a corresponding increase in its proper use as manure. It considered that the target for all these purposes should be a total of 1,50,000 acres on a ten-year rotation or 15,000 acres a year.

(4) *Areas selected for application.*—Mainly along the eastern coastal areas of the province.

(5) *Time expected to be taken for execution.*—Ten years, but replanting of felled areas on the same scale will continue indefinitely.

(6) *Brief details of the staff required and how staff is proposed to be obtained.*—Four new forest divisions will be required.—i.e., 4 Gazetted Officers, 24 Rangers and a corresponding complement of sub-ordinates, clerical and menial staff.

It will be found in the first instance by promotion from the next lower categories; and in the case of the lower ranks by direct recruitment.

(7) *Rough estimate of cost at existing rates.*—(i) Capital. Nil.

(ii) Recurring. Rs. 20,00,000.

(8) *Extent to which the scheme will be productive.*—The scheme will produce no revenue until the latter part of the second five-year period. Thereafter it will produce an annual revenue of Rs. 45,00,000.

(9) *Extent to which the scheme will cater for returned service-personnel.*—The scheme will employ a very large labour force, but it is doubtful whether it will be suitable work for ex-service men. It will however contribute appreciably towards the solution of general post-war employment problems.

(10) *General description of Plant, equipment or Stores.*—Nil.

(i) To be imported from abroad.

(ii) To be obtained in India.

(11) *Labour force required in the case of the larger schemes.*—Nil.

(12) *Whether the assistance of the Central Government is likely to be required for obtaining materials, machinery or technical personnel.*—Nil.

(13) *Brief indication where applicable of further development contemplated on the lines of the scheme in succeeding five-year periods.*—The scheme will continue throughout the second five year period. Thereafter replanting the felled areas will continue at the same rate indefinitely.

(14) *Any other remarks or information.*—

(1) *Serial No. of Scheme.*—Scheme No. 8.

(2) *Name of Scheme.*—Extension of Teak Plantations.

(3) *Brief description of scheme.*—For the past 20 years the Forest Department has been converting all suitable and suitably situated land in its possession into teak plantations. The rate of progress is about

1,500 acres a year, and this is about the maximum possible, having in view the total area of suitable land now in our possession. The new plantations when they reach maturity will bring about a 3-fold increase in our output of teak. But there will still be a deficit of about 20,000 tons a year if it is desired to cut out imports. This will need about 700 acres of plantation annually for the rotation period of 70 years. We should therefore acquire about 50,000 acres of suitable land mainly in the private forests of Malabar. The cost of acquisition of such land cannot be stated at this stage, but a rough guess is that it might be of the order of 20 per acre. The cost of forming the plantations, with field crops is very small. So that, with acquisition, the cost of an established plantation would be under 50 per acre. At rotation age (70 years) the crop on an acre would be worth about Rs. 2,000 and there would be substantial intermediate yields along that. The cost of acquisition may be taken as included in the provisions made for acquisition of private forests in Scheme No. 4.

(4) *Areas selected for application if applicable.*—Not yet selected.

(5) *Time expected to be taken for execution.*—Will begin in the first 5-year period and continue throughout the rotation of 70 years, with replanting of felled areas on the same scale thereafter.

(6) *Brief details of staff required and how staff is proposed to be obtained.*—The staff is included in the provision made under scheme No. 4.

(7) *Rough estimate of cost at existing rates.*—(i) Capital.—Rs. 10 00,000 (but this is included already in the provision made under scheme No. 4).

(ii) Recurring.—Rs. 20,000.

(8) *Extent to which the Scheme will be productive.*—The Scheme will produce an annual revenue of Rs. 15,00,000 from rotation age onwards, with substantial intermediate yields long before then. There will be a small annual revenue of about Rs. 10,000 from the outset.

(9) *Extent to which the Scheme will cater for returned service personnel.*—To no appreciable extent.

(10) *General description of plant, equipment or stores.*—Nil.

(11) *Labour force required in the case of the larger schemes.*—Nil.

(12) *Whether the assistance of the Central Government is likely to be required for obtaining materials, machinery or technical personnel.*—Nil.

(13) *Brief indication where applicable of further development contemplated on the lines of the scheme in succeeding five year periods.*—The Scheme will continue indefinitely on the same scale as in the first 5-year period.

(14) *Any other remarks or information.*

(1) *Serial No. of Scheme.*—Scheme No. 9.

(2) *Name of Scheme.*—Softwood plantations.

(3) *Brief description of scheme.*—The future as regards adequate sustained supplies of softwoods within economic reach of the West Coast mills is not accurately known. Most of these have hitherto come from private forests. It seems highly probable however that our present softwood plantation activities will have to be expanded on a considerable scale. It is likely that it will be necessary to acquire private forest for the purpose.

The tentative plan is to produce 10 lakhs of cubic feet a year, needing about 30,000 acres, raising 1,000 acres of plantation annually on a 30 year rotation. The cost of acquisition of the necessary land may be taken as included in the provision made in Scheme No. 4. The cost of formation of the plantations may be put at Rs. 30 per acre at rotation age (30 years) the crop will be worth Rs. 500 per acre.

(4) *Areas selected for application if applicable.*—Mainly north Malabar—Definite areas not yet selected.

(5) *Time expected to be taken for execution.*—To begin in first 5-year period and will continue to rotation age (30 years) with replanting of felled areas at the same rate thereafter.

(6) *Brief details of staff required and how staff is proposed to be obtained.*—The staff is included in the provision made under scheme No. 4.

(7) *Rough estimate of cost at existing rates.*—(i) Capital.—Rs. 6,00,000 (but this is included in the provision made in scheme 4).

(ii) Recurring.—Rs. 30,000.

(8) *Extent to which the scheme will be productive.*—The scheme will produce an annual revenue of Rs. 5,00,000 from rotation age (30 years). There will be substantial intermediate yields from about 15th year. From its inception there will be a small annual revenue of Rs. 10,000.

(9) *Extent to which the Scheme will cater for returned service personnel.*—Not appreciably.

(10) *General description of plant, equipment or stores.*—Nil.

(11) *Labour force required in the case of the larger schemes.*—Nil.

(12) *Whether the assistance of the Central Government is likely to be required for obtaining materials, machinery or technical personnel.*—Nil.

(13) *Brief indication where applicable of further development contemplated on the lines of the scheme in succeeding five year periods.*—The Scheme will continue on the same scale till rotation age (30 years) with replanting of felled areas at an equal rate thereafter, indefinitely.

(14) *Any other remarks or information.*

(1) *Serial No. of Scheme.*—Scheme No. 10.

(2) *Name of Scheme.*—Forest Roads.

(3) *Brief description of Scheme.*—The following major items of forest road development were included as post-war proposals in my Note placed before the Forestry Sub-Committee. They are dealt with in more detail in that note and have, I understand, been accepted by the Sub-Committee. Here it is only necessary to list them, with a forecast of the cost of each :—

	Rs.
(i) Road development Rampu Agency, extending the general road development expected in that area into forest centres ..	2,50,000
(ii) Metalling the newly constructed, Mannaghat-Attapadi Road	1,00,000
(iii) Extending item (ii) above via Tadagam to join the Coimbatore Road system	3,00,000
(iv) Expansion and improvement of the road system in the Nilambur Forest Division	1,00,000
(v) Carrying the Mount Stuart Road system in South Coimbatore Division into the Ulaudi Valley (a metalled road) ..	4,00,000
(vi) Extension and improvement of the Road system in the Javadi Hills	2,50,000
(vii) Improving and extending the road connection between the Manantoddy Tellicherry Ghat Road and the Kottivur forests	1,00,000
	<hr/> 15,00,000

Except items (iv) and (v) these roads will be of much value in opening up backward tract as well as for purely forest purposes. Item (iii) is under present conditions to be viewed almost entirely from the former aspect, and expenditure of forest funds would not be justified, though the work could most conveniently be done by the Forest Department's engineering branch. Item (vii) was added on the suggestion of a member of the Sub-Committee.

(4) *Areas selected for application if applicable.*—Not applicable.

(5) *Time expected to be taken for execution.*—Spread over 2 post-war 5-year periods.

(6) *Brief details of staff required and how staff is proposed to be obtained.*—The additional staff required will be

- 1 Gazetted Assistant for the Forest Engineer.
- 4 Rangers.
- 8 Foresters.
- 2 Clerks.
- 1 Compounder.
- 7 Menials.

The higher ranks will be obtained by promotion from the next lower category, in the first instance, and later by trained recruits.

(7) *Rough estimate of cost at existing rates.*—(i) Capital.—Rs. 7,50,000 in the first 5-year period and the same amount in 2nd 5-year period.

(ii) Recurring.—Rs. 20,000 in first 5-year period rising to 30,000 on completion : (maintenance). Rs. 25,000 (Staff).

(8) *Extent to which the scheme will be productive.*—Cannot be stated without detailed examination of each case.

(9) *Extent to which the scheme will cater for returned service personnel.*—The Scheme will employ labour for about 1,000 persons continuously, but the work will probably be most suitably done by local labour. It will however contribute to the extent to post-war unemployment problems.

(10) *General description of plant, equipment or stores.*—Nil.

(11) *Labour force required in the case of the larger schemes.*—Nil.

(12) *Whether the assistance of the Central Government is likely to be required for obtaining materials, machinery or technical personnel.*—Nil.

(13) *Brief indication where applicable of further development contemplated on the lines of the scheme in succeeding five year periods.*—The Scheme will continue through the second 5-year post-war period. Further development if any, will be on a smaller scale.

(14) *Any other remarks or information.*

(1) *Serial No. of Scheme.*—Scheme No. 11.

(2) *Name of Scheme.*—Improved amenities for forest staff and labour.

(3) *Brief description of Scheme.*—The excellent results which have followed upon the special attention paid to the housing of the subordinate staff, to anti-malarial measures and to the provision of simple medical care notably in the South Coimbatore Division indicate the importance of extending work of this kind to other main centres of forest activity. Detailed schemes have not yet been prepared, and all that can be done at this stage is to make a lump sum provision.

(4) *Areas selected for application, if applicable.*—Nilambur Division, Chedlth and Begur in the Wynaad; Sriharikota in Nellore division; Upper Godawari division; the Nallamalais; the Javadis.

(5) *Time expected to be taken for execution.*—Spread over two 5-year periods.

(6) *Brief details of staff required and how staff is proposed to be obtained.*—

A small medical staff of Sub-Assistant Surgeon and Compounder grades and a small menial staff for anti-malarial routine duties. The main work will be done by the ordinary division staff.

(7) *Rough estimate of cost at existing rates.*—

(i) *Capital.*—Rs. 3,00,000 in first 5-year period and the same sum in the second 5-year period—for housing.

(ii) *Recurring.*—Rs. 80,000 for anti-malarial measures and medical care.

(8) *Extent to which the scheme will be productive.*—Not directly productive.

(9) *Extent to which the scheme will cater for returned Service Personnel.*—Nil.

(10) *General description of plant, equipment or stores.*—Nil.

(11) *Labour force required in the case of the larger schemes.*—Nil.

(12) *Whether the assistance of the Central Government is likely to be required for obtaining materials, machinery or technical personnel.*—Nil.

(13) *Brief indication where applicable of further development contemplated on the lines of the scheme in succeeding five-year periods.*—Expenditure on housing will be on a reduced scale after the second 5-year period. Expenditure on anti-malarial measures and medical care will continue indefinitely.

(14) *Any other remarks or information.*

(1) *Serial No. of scheme.*—Scheme No. 12.

(2) *Name of scheme.*—Creation of a Class I Madras Forest Service.

(3) *Brief description of scheme.*—There is not the smallest likelihood that the pay and status now offered to future entrants into the gazetted ranks of the Madras Forest Service, will attract candidates of the quality needed. This is particularly so in the case of a forest career which does not, in itself, appeal strongly to many young Indians. To build up a Madras Forest Service fit for the duties it will have to perform, I am of the opinion that at least half of the future gazetted cadre should be recruited in a higher class, equivalent in pay and status to the old Indian Forest Service.

(4) *Areas selected for application if applicable.*—Not applicable.

(5) *Time expected to be taken for execution.*—Not applicable.

(6) *Brief details of staff required and how staff is proposed to be obtained.*—Not applicable.

(7) *Rough estimate of cost at existing rates :—*

(i) *Capital.*—Nil.

(ii) *Recurring.*—The cost in the first 5-year post-war period would not be appreciable. It would gradually rise to a maximum of about Rs. 3,50,000 annually.

(8) *Extent to which the scheme will be productive.*

(9) *Extent to which the scheme will cater for returned service personnel.*

(10) *General description of plant, equipment or stores.*

(11) *Labour force required in the case of the larger schemes.*

(12) *Whether the assistance of the Central Government is likely to be required for obtaining materials, machinery or technical personnel.*

(13) *Brief indications where applicable of further development contemplated on the lines of the scheme in succeeding five year periods.*

(14) *Any other remarks or information.*

Abstract of the Scheme.

Subject of development.	Serial No. of Scheme.	Approximate cost of 5 year plan in thousands of Rs.		Category of scheme.	Annual revenue in first five year post war period in thousands of Rs.	Remarks.
		(i) Capital.	(ii) Recurring			
Forestry	1	Rs.	Rs. 75	Special priority.	Rs.	Will continue indefinitely at the same level.
"	2	"	500	"	300	A "Social Service" but should ultimately be self-supporting.
"	3	"	400	All provinces	"	A "Social Service" Recurring expenditure will rise to Rs. 8 lakhs in 2nd 5-year period and will continue at that.
"	4	5,000	200	"	125	An equal capital and recurring expenditure is contemplated in the second 5-year period. The scheme is to be viewed as a social service, and a fitting one to which to devote a large part of the war time surplus earned by the Forest Department which will total between 200 and 700 lakhs.
"	5	20	160	"	50	The scheme will increase by the same amount in each of the following 5-year period. A social service but should ultimately be self-supporting.
"	6	"	160	"	"	Will be highly remunerative from end of 2nd 5 year period producing annual revenue of 45 lakhs.
"	7	"	2,000	"	"	
"	8	"	20	"	10	Capital expenditure included under Serial No. 4. (The capital expenditure will be 10 lakhs under Scheme No. 8) The scheme will yield an annual revenue of Rs. 15 lakhs from rotation age (70 years) with substantial intermediate yields much earlier.
"	9	"	30	All provinces	10	Capital expenditure (8) lakhs for acquisition included in provision made in Serial No. 4. The scheme will produce annual revenue of Rs. 5 lakhs from rotation age (70 years) with substantial intermediate yields from 15th year.
"	10	750	45	"	"	The same in 2nd 5-year period.
"	11	300	30	"	"	The same in 2nd 5-year period.
"	12	"	"	"	"	The cost will be negligible in the first 5-year period increasing to maximum of Rs. 3½ lakhs some 30 years hence.
Total		6,070	3,020	"	405	

EXTRACT FROM THE CHIEF CONSERVATOR'S NOTE.

The proposals made in this note will involve during the coming decade extra trained staff (excluding leave reserve) to approximately the following extent :—

	Gazetted officers.	Rangers.	Remarks.
1. Forrestoring the Working Plan Circle ..	6	16	Includes one additional Conservator (see footnote to this statement).
2. Soil Conservation Circle (including further reservation other than item 6).	10	56	Includes two additional Conservators (see footnote to this statement).
3. State Management of private forests ..	4	24	
4. Trained staff for loan to private forest owners	4	24	
5. Resumption of control of Panchayat Forests	8	30	Includes one additional Conservator (see footnote to this statement).
6. Creation of village forests }	4	24	
7. Tungabhadra }	1	6	
Hagari }			
Pannara }			
8. Additional Conservator to cover items 1, 4, 6 and 7	1	..	See footnote to this statement.
9. Principal and Instructors for Rangers' School.	4	..	
Total (excluding leave reserve)	48	170	

Note.—The Conservators' charges (and District Forest Officers' charges too) would of course be adjusted; they would not overlap.

This means

(a) *Gazetted Officers.*—Allowing for 6 temporary posts already in being and likely to become permanent and for leave reserve at 14 per cent. the present cadre of 51 will increase by 1953 to 114. By 1953 we shall have lost 42 officers by retirement and gained (assuming 4 a year from Dehra Dun from 1946 onwards) 32 trained recruits from Dehra Dun. 23 Rangers will have been promoted to Gazetted rank under the normal 20 per cent. proportion for promotion by transfer. We shall thus need 50 additional officers besides those expected from Dehra Dun—an average of 5 a year to be found from our own resources. These will be found by promoting the best of the present and incoming trained rangers.

(b) *Rangers.*—The proposals involve increasing the cadre from its present strength of 154 (or with 10 temporary posts—already in being, 164) to 343 in 1953, excluding provision for a leave reserve. A leave reserve is not included in the present cadre, but is absolutely necessary. With provision for this the cadre will be 391 in 1953.

By that date we shall have lost 97 Rangers by retirement and 23 by substantive promotion to gazetted rank. Intake from Dehra Dun of trained rangers at 7 a year from 1945 onwards will be 63 by 1953. By the same date 26 untrained forestors will have been promoted by transfer (at 10 per cent. of the cadre). We shall thus need to recruit and train about 250 rangers in the next 10 years, an average of 25 a year. This, as it happens, is a suitable size, for a class to be recruited

and trained annually and is about the same as the annual intake of students (including students from other provinces) used to be before the Madras Forest College was closed. Obviously the Madras Forest College must be re-opened as soon as its buildings can be given back to us. Until then we must manage with makeshift arrangements. At least 25 students should be recruited at once and sent for preliminary practical training, with a view to beginning their regular course of instruction in July 1945.

The position as regards recruitment when the new cadres have been built up to full strength by about 1953 will be :—

	Strength of cadre.	Annual wastage.	Annual possible intake at Dehra Dun.	Annual deficit.
Gazetted Officers ..	114	6	4	2
Rangers ..	391	19	7	12

There will thus be an annual deficit of 2 officers and 12 Rangers. Dehra Dun has made arrangements to double its output from 1945 but this has been allowed for in the figures given in the statement above. If Dehra Dun cannot still further increase its output of the Gazetted officers class the deficit will have to be made good by selection from among the Ranger Class to be trained in the province, or by special recruitment of men from Oxford or other schools of Forestry in the United Kingdom. This matter is referred to further below.

As regards Rangers it seems highly probable that, with most provinces and states expanding their forest departments on a big scale, the demands will become so great that the Dehra Dun College will welcome release from the obligation of training Rangers for Madras. In that case the class to be recruited annually for training at the Madras Forest College would (after the new cadre has been built up) number 19. This, though on the small side, would in itself justify the permanent continuance of the Madras College, but it is most probable that demand from neighbouring states would raise the annual intake of students to at least 25, an ideal size for a class. The standard of instructions and quality of the men, turned out from the Madras Forest College were at least as high as at Dehra Dun.

There is thus the strongest case for reopening the Madras Forest College immediately and continuing it permanently. The annual cost would be about Rs. 75,000.

Finally there is the most important matter of the quality of the future entrant into the Gazetted ranks of the service. There is no doubt at all that if the status and pay of future entrants remain at their present level their quality will be extremely low. The Simon Commission hesitated long before it decided against continuing the old Indian Forest Service as an All India Service. Had erosion and land management questions then been as much as in the public eye as they are to-day this decision might well have been reversed. Be that as it may, there is no reason why the Madras Government should not set about building up a Forest Service of a quality fit for the duties it will have to perform. The rapidly growing direct value of the State's forest property, and the still more important duties of incalculable indirect benefit which it already performs, and which are likely to be greatly extended call for the

employment of the best officers we can get. The care and extension of a country's forest resources, the conservation of its water supplies and the maintenance of the fertility of its soil are matters at least as important as the maintenance of law and order, and are certainly no easier; and they are ones which a Government ought to view as an equally heavy responsibility. With existing arrangements for the future I see no prospect of getting officers fit for most of the divisional charges, far less for the considerable number of administrative posts. We must have men fitted by temperament for forest life, and not men who take a post in the Forest Service *faute de mieux* (or what they consider better).

On this subject of temperamental suitability it is my firm belief that the Forest Department needs a proportion of the best type of European Officer.

My proposal is that at least half the future gazetted cadre should be in a higher class, equivalent in pay and status to the old Indian Forest Service and that there should be arrangements for European recruitment up to half the strength of this class.

I would also re-open Coorg for recruitment both for officers and rangers. Coorg has given us many of our best rangers in the past—again a question of fitness by temperament.

Item No. 3.—Post war forest policy and development in Orissa.

BY

J. W. NICHOLSON, C.I.E., I.F.S., CONSERVATOR OF FORESTS,
ORISSA.

I. Post War Forest Policy.—A forest policy has recently been drafted and recommended to Government for adoption. In its main features it is based on the old Government of India policy but it contains the following new features:—

(a) It lays down that every forest, whether private or Government the permanent preservation of which is required in the public interest should be *reserved*. This is a serious omission in the Government of India policy which is still based on the efficacy of Protected Forests.

(b) It provides for the gradual handing over of Undemarcated Forests and small reserved blocks of limited local value to management by village Panchayats *pari passu* with the development of their capacity to manage such forests successfully.

(c) It emphasises the need for Government control over certain categories of Private Forests. To enable Government to exercise more effective control over Private Forests than the provisions of the Madras or Indian Forest Acts permitted an Orissa Forest Bill was drafted to replace the existing Acts and the provisions in respect of Private Forests were modified to admit of effective control by Government. Unfortunately, as the Bill had to go before a Legislative Assembly Committee of a Coalition Ministry dependent

on the support of landlords, the most important provision for exercising effective control was excised as the result of their influence. Even so the Bill is an improvement on the old Acts and it is hoped that it will shortly receive the assent of the Governor General.

II. Post War Development Scheme.—(a) Demarcation of Government forests.—It is intended to complete the demarcation of Government forests within the next 5 years bringing the total area up to at least 3,000 sq. miles.

(b) Settlement of Government forests.—Settlement of Government forests is to be completed within 10 years.

(c) Investigation into the nature and extent of Private Forests over which Government should exercise control. A retired Forest Officer has been appointed from this month to start such an investigation. The intent on is to complete it within 5 years but as about 8 to 19,000 sq. miles of forest will have to be inspected further time may be necessary.

(d) Creation of minor forests.—It is intended to establish plantations in areas where the local people are suffering from a shortage of fuel and poles which cannot be met by the reservation of existing Government or Private Forests. A start will be made within the first 5 years. In the meantime a preliminary investigation is being started by the same Officer as under (c).

(e) Soil Conservation.—An Officer will be appointed and trained to initiate Soil conservation on Government land and to advise other land owners. The Legislative Assembly Committee on the Orissa Forest Bill were in favour of the Forest Department taking over the management of all Government waste lands in the province owing to the failure of Revenue officials to look after such lands. If this proposal is given effect to more than one Soil Conservation Officer will be necessary.

(f) Communications.—The plan is to construct 30 miles of new roads annually and to improve, by widening and metalling etc., 50 miles of old roads annually. Provision has been made for the purchase of one Bull Dozer. This programme is a modest one as it is not expected that the supply of labour available will permit of a more ambitious one. (My criticism of other departments Post War Development Schemes is that they are impossible of complete achievement owing to their having been based on the myth that there is inexhaustible manpower in India. In actual fact less than .1 per cent. of Orissa's population has been enlisted in Pioneer Labour Forces, etc.).

(g) Buildings—wells.—The first 5 year plan provides for the construction of all buildings and wells required for the accommodation of or use by the Forest staff. It does not include provision for any new Rest Houses or Rest-Sheds.

(h). Forest education.—Foresters are at present being trained at the Eastern States Agency School at Champna but the Chief Forest Adviser cannot allot us the number of seats we require. Owing to the ever growing intensity of forest management extension of Government reserves and the needs of Private Forest owners, it is necessary for Orissa to have its own Foresters School. It is planned to establish one

and open it in 1947-48. A Forest Guards class is at present held annually in temporary buildings for it. The aim is that every forest subordinate from Forest Guards up to Forest Rangers should be trained, and to fulfil this objective within the next 10 years.

These schemes costing 10 lakhs in the first 5 years, will be financed from Provincial Post War Development funds. As 25 per cent. of our net war time revenue is being set aside for general forest development there should be no shortage of funds if it is found advisable to expand schemes already proposed or initiate others.

III. *Post War Administrative expansion*—There are at present 8 territorial divisions. One new one is being started in 1945-46 the present Balliguda Division having become unwieldy. It is also the intention to split up Balliguda Division again in about another 2 or 3 years time. The 10 divisions will average about 300 sq. miles. No further Government forest divisions are contemplated unless it is found advisable to create a minor forest division in the coastal tracts. When Government assumes management of most Private Forests, as will almost certainly prove necessary, at the very least 4 private forests territorial divisions will be required. When these are about to be established it will be necessary to have two administrative circles—an agency non-regulation circle with headquarters at Kotapat embracing at least 7 divisions and another regulation tract circle with headquarters at Angul and also embracing at least 7 divisions. There will be a Chief Conservator of Forests with headquarters at Cuttack under whom will be 2 Working Plan Officers, a Utilisation Officer, a Research Officer and a Soil Conservation Officer. If Soil Conservation work expands a separate Development circle will be needed. These Post War administrative developments which are expected to take place within 10 years will involve an increase in the gazetted cadre from 14 to 34 officers and a big recruitment and training problem.

Item No. 3.—Post war Forest Plans in the Punjab.

BY

A. P. F. HAMILTON, O.B.E., M.C., I.F.S., CHIEF CONSERVATOR
OF FORESTS, PUNJAB.

I will preface this note by pointing out that there already exists in the more enlightened section of the Punjab public a realisation of the necessity for a stronger forest policy, particularly for soil conservation and for the better utilisation of waste lands. The present serious fire-wood and charcoal-famine has also focussed attention on the necessity for building up reserves for the future, while the difficulty in finding high quality shisham logs for war purposes shows in a bad light a country which has a reputation for growing some of the finest shisham. Several of the measures recommended by the Government of India Post War Reconstruction Policy Committee have been in operation for some time in the Punjab but in respect of most of them a stronger policy is required if the objects set out in the Committee's report are to be attained. But a stronger policy will be effective only if the backing of the public

is there. In India, where agriculture and forestry are so closely connected policy must be such as to give due consideration to the requirements of both, as determined by local conditions. This might require considerable modification of present policy in order to obtain the co-operation of the villagers. It will certainly require the carrying out of a strong publicity programme before any general measures restricting the traditional activities of the people can be put into effect without serious opposition.

It is correct to say that it is mainly on account of its soil conservation activities that the Forest Department has come to be looked upon largely as one of the beneficent departments, as they are called in this province, for it has resulted in the making of contacts with the people over a wide area. The Punjabi is, on the whole, not slow to follow up advice once he realises that it is sound, but it must be admitted that where it has been possible to demonstrate that there is money in soil conservation and protection, e.g. from the sale of grass and firewood, all has been plain sailing. However, this applies mainly to the sub-montane where the waste is largely in private ownership. In the high hills, where the important government forests are situated, matters are different; and although the relations between the villagers and the department are far better than they used to be, the old prejudices still exist; it is therefore necessary to discuss future plans, or policy, under two heads, in the hills, and in the sub-montane and plains.

PLANS FOR THE HILL FORESTS.

General Plan.—The hill forests are mainly coniferous with some oak and scrub at lower elevations. Except in remote valleys and at high altitudes village communities have lived in close contact with the forest for centuries; cultivation and habitations are permanent and social ties strong. Since the last forest settlement, human and animal population have gone up, the standard of living has tended to rise, and the result is increasing pressure on the forest.

From the legal aspect three classes of forest are distinguished:—

I. *Reserves*, in which rights are non-existent or negligible.

II. *Demarcated Protected Forests*, in which rights of user, often heavy, have been conceded by Forest Settlements.

III. *Undemarcated Protected Forests and Unclassed forests.*—These forests are distinguished from Class II by the inability of Government to make closures in them except with the consent of the right-holders. There are no grazing restrictions at all, but there are complicated rules to control the utilisation, including lopping, which have never worked satisfactorily.

Fellings for export are ordinarily made in the first two classes, which are invariably under working plan management; occasionally thinnings and improvement fellings have been made in remote forests of the III class where the population is small.

The III class forests are, as expected, generally in a bad state, and are steadily deteriorating. An unfavourable reaction is that the over-utilisation of these forests has led to increasing demands on the adjoining demarcated forest.

It is proposed to make a recommendation to Government on the following lines :

"That whereas the undemarcated and unclassified forests and other village waste in the hills are being denuded and are undergoing erosion as a result of excessive grazing and overfelling by the right-holders, and as they lie in the catchment areas of rivers which supply water for the irrigation systems and for the great dam schemes now being planned and are also essential for the well-being of the villagers who use them, therefore in the interests of the villagers themselves and in the wider interests of the province as a whole it is recommended that speedy action be taken to protect these forests from further destruction and to introduce a system of management which will ensure their perpetuity."

The measures suggested will be :

(a) Revision of the old Forest Settlements which were made some 70 years ago when conditions were entirely different ; the chief object is to provide for the demarcation of the class III forests.

(b) Inclusion of the undemarcated and unclassified forests in working plans so that all classes, reserves as well, will form one composite whole for purposes of management, including grazing and closure arrangements. In the Kangra experiment, which has been quite successful, Government have allocated forest revenues to village societies which have agreed to management on these lines, and this policy might be extended to other hill divisions either in the same or a modified form.

(c) In certain regions, e.g. the Murree Hills and Kalachitta reserve, the situation indicates that present forest policy should be modified so as to give preference to the requirements of protection and local consumption rather than to export felling.

(d) Restriction and Limitation of nomadic flocks.

(e) Village lands under severe erosion will be closed compulsorily without delay.

(f) Forests destroyed by fire to be closed for regeneration at once, if working plan closure prescriptions can be modified to permit it, and in any case where the fire can be proved to have been caused by incendiarism.

(g) Measures to increase fodder production. In the event of action being taken under (a) and (b) revisions of existing working plans will be necessary.

The Fir Problem.—Heavy fellings have been made during the war both in the Punjab and in the hill States. The regeneration of these forests is imperative ; this war has shown the value of fir and spruce timber ; without it very difficult supply problems would have arisen. The situation will have to be surveyed and fir regeneration programmes, which do not exist at present in any of the working plans, will have to be drawn up and funds provided without stint. This alone will not solve the problem. Markets must be found for fir, because unless future fellings can be made, proper silviculture cannot follow. Markets will have to be found in :—

(a) Railway sleeper contracts.

(b) Plywood and packing case trades.

(c) Pulpwood.

(d) In conjunction with saw-mills, timber treated with preservatives.

Erosion Surveys.—Erosion surveys on the lines of that prepared for the Uhl river catchment (Hydro-electric scheme) will be necessary for any river on which large reservoir dams are to be constructed.

Their object will be the evaluation of the protection measures required to ensure normal stream flow and a low silting factor. In parenthesis, it is worth noting that Mr. Savage, the American High Dam expert, who is advising the Government of India on dam projects, has stated that he would be happier if all the great river catchments were under full protection.

Post-war Development.—(Hills and plains).—A Forest Reconstruction Fund of Rs. 30 lacs has been accumulated out of surplus income. Some of the projects on which it is proposed to spend this money are :—

- Development of communications.
- Widespread plantation of *Bhabar (sabal)* grass.
- Regeneration of the fir forests.
- Re-planning of water-courses in irrigated plantations.
- Improvement of labour settlements in the irrigated plantations.
- Purchase of publicity equipment, including cinema projectors.
- Extension and improvement of subordinate quarters.

PLANS FOR THE SUB-MONTANE AND PLAINS.

Scope of Plans.—There is a vast area of waste land nearly 14 million acres, in the Punjab, plains and sub-montane; some of it belongs to Government, but the greater proportion is owned by villages in the form of common land, or by individuals. Some of it is cultivable; there are tracts where salinity is too intense even for trees to grow; there are rocky hills where, owing to physiological drought, vegetation of the most xerophytic forms only can exist. But huge areas remain for afforestation, and it is believed that even in "desert fringe" to the south and west of the Punjab, where the average annual rainfall does not exceed 5 inches, forest of economic value can be grown. In the central parts of the Punjab prolonged irrigation has produced water-logging to a serious and increasing degree; much of this can probably be reclaimed by afforestation, though it will not be easy.

The canal banks with their numerous branches and distributaries, roadside avenues and railway embankments can all contribute towards timber and firewood production apart from their main objects shade and protection, and it is likely that the management of these lands will be entrusted to the Forest Department.

The food and fodder shortage has urged on the Central and Provincial Governments the necessity for utilising the soil to the utmost. The Forest Department have such a large and important part to play in the reconstruction of the country that schemes must be planned with foresight and must be of a practical nature; the scope and diversity of the work, indeed, demand this.

The objects of the policy must be clearly realised in order to understand that planning has to be done for a long way ahead ; the ultimate achievement of the objects may take as much as thirty years, but that is nothing in the lifetime of a nation.

Long term planning.—These objects are :

(a) to increase purchasing power and raise standards of living by conserving soil and rainfall throughout the whole of the *barani* tract in the Punjab. (*barani* means land dependent on rainfall).

(b) to establish a sound village economy ; this means a properly balanced allocation of the land for the supply of food, fodder (and grazing) and firewood.

(c) to provide adequate supplies of firewood and hardwood timber for the whole province.

(d) to develop those cottage industries which use forest produce.

It follows that the basic principles underlying the long term plan must be :

that complete and rational use of the land is made (rational here means growing on the soil what is best suited for it).

and

that those who misuse or waste their land shall not be permitted to evade their responsibilities to the state.

Short term planning.—Short term planning is concerned mainly with the setting in motion of the machinery designed to carry out policy ; it impels immediate action and early decision on many points regarding ways and means.

Immediate action is necessary for the preparation of detailed regional plans and schemes for the settlement of ex-soldiers on the land and their employment (recruitment has been heaviest in the tracts covered by the Forest Department plans). Arrangements have to be made for the recruitment and training of staff, land utilisation surveys have to be made, nursery and plantation schemes have to be drawn up and a host of other preparations made.

5-Year Post-war plan.—The Government of India have asked the Provinces to submit schemes for a 5-year post-war plan. The Forest Department have submitted their plan based on the allocation of Rs. 2 crores ; here is short term planning with a vengeance and it will be obvious from what has been said that if the plan is to meet with success, if it is to develop smoothly and if the large funds available are to be wisely spent, then the following five important matters have to be considered and decisions reached before much can be done in the way of planning.

Basis of the Plan.—I. *Legislation to implement policy where co-operation is withheld in spite of propaganda and publicity.*—In the Punjab the Land Preservation Act, applicable to the whole province, has been recently amended. It contains adequate provisions for dealing with all forms of erosion, but it contains no clauses whereby an owner could be compelled to afforest waste land, or alternatively, to permit government to afforest it on conditions ; neither does it provide for the

proper management under working plans of private forest in which erosion has not yet appeared, but which is of value to the state for protection of climate reason. It is considered that legislation is necessary for both purposes, and Government will be asked to approve a Private Forest Bill, or something of the sort.

II. Land utilization surveys. At the request of the Government of India the Forest Department has begun in a few plains districts to survey the waste in the plains, broadly classifying it as being suitable for cultivation or not for cultivation. What has to be decided is the order of priority in which districts will be selected for survey, and the extent to which the Forest Department will be associated in these surveys, for they form the basis of planning and they must be made in accordance with some agreed formula.

III. Machinery for the direction and coordination of policy.—The Forest Department have set up a Land Utilization Board; a similar organization is essential in the Provinces. The Forest Department plan involves the co-ordination of several departments; these departments all have their own plans, but none of them directly requires the assistance of the Forest Department; all of them will be busy with their own work. If, therefore, the numerous problems which will arise are left to be settled through the normal departmental machinery, there will be conflict of view and the more urgent parts of the plan (such as those connected with the employment and utilization of ex-servicemen) will certainly fail. The Land Utilization Board will set a line, the survey will take common ground, or will if it is necessary to state later. Progress will be slow unless the whole matter is settled on broad lines and for this purpose the setting up of a Land Utilization Board with at least powers to co-ordinate. In any case an ad hoc Forest Committee is required, either by itself, or as a subcommittee of the larger Land Utilization Board. Some of the functions of this Board or the Forest Committee would be:

- (a) to control and co-ordinate land utilization surveys;
- (b) to make decisions on problems arising out of the surveys and to allocate the land to its best use;
- (c) to decide policy under which cultivated land should be given up or not and put under a productive regime; e.g. where land is being lost by erosion, or erosion is being caused by cultivation on steep slopes;
- (d) to deal with questions relating to the acquisition of privately owned waste for afforestation;
- (e) to provide for the proper functioning of regional soil conservation plans which involve the participation of several departments;
- (f) to coordinate plans submitted by the Forest Department for the reclamation of vital catchment areas.

(g) to co-ordinate large scale land planning operations that will undoubtedly emerge in rural economy, even though they may ultimately benefit those concerned, some or little benefit as possible during the transition change; such would be the case when a tract

which has been under a regime mainly pastoral, is to be developed—through a combination of improved agriculture and afforestation, e.g. the huge Thal tract in the Western Punjab. Plans must include provision for economic grazing and browsing and stock improvement whenever necessary.

This committee might be composed of 1 officer each of the following departments :

Revenue, Agriculture, Co-operative and Forests, assisted when necessary, by an officer of the Irrigation Branch, P.W.D. It would be a standing committee and would have to be vested with powers to make decisions in accordance with policy prescribed by government.

IV. *The provision of staff.*—The grant of Rs. 2 crores referred to above includes the cost of cadre expansion, construction of quarters, additional training facilities, and the purchase of mechanical equipment from overseas, but about 1-1/2 crores will be available for works and this sum is to be spent in 5 years. It is estimated that this will require an expansion of all the cadres of the Forest Department by some 75 per cent. Expansion has already begun. Two Provincial Forest Services exist ; the P.F.S.I. is designed to replace the I.F.S. and is being filled as fast as seats can be allotted in the Indian Forest College, Dehra Dun. Recruitment to the P.F.S.II, a service which is necessary to fill posts of gazetted assistant and to prepare and execute soil conservation plans, will be partly by promotion from amongst Forest Rangers, but the method of direct recruitment is not yet decided. The chief difficulty will be the supply of Forest Rangers ; it is not possible to get enough seats at Dehra Dun and no local arrangements could be made which would turn out men of the standard produced by the Rangers' College. To tide over the period of shortage sufficient promotions from Deputy Rangers will have to be made, but the building up of a strong Forest Ranger cadre will be given high priority in post-war policy.

The training of the large number of foresters and guards required will be far beyond the capacity of the provincial forest school, even with its present two courses. The deficiency can only be met by arranging short but intensive field-training courses in a number of forest divisions. Subsequently the better men will be selected for training at the forest school.

V. *The build-up of administrative frame-work.*—The long term policy of the plan implies the spread of the activities of the department over the whole province. This will require a multiplication of circles and divisions ; and some of the Soil Conservation divisions are already too large and will have to be split up. The ultimate aim is to make forest divisions coincide with districts (though in a number of cases there will be more than one division in a district), the divisional forest officer being responsible for all forest, soil conservation and tree growing activities in the district.

The present number of 23 divisions is expected to increase to 36, which will be allotted to 5 Circles ; in addition the Working Plans and Utilisation Circle will be revived. This will be more than one Chief Conservator of Forests can manage, and it has been proposed that two

administrations should be formed each under a Chief Conservator of forests; the Circles will be so grouped that one administration will be constituted mainly of Soil Conservation divisions and the other mainly of Hill Forest Divisions. Certain matters common to both administrations, such as establishment, will have to be dealt with by one of the Chief Conservators of Forests.

The proposals submitted to Government are not considered as final; the administrations will be built up gradually as staff becomes available; experience will determine the most suitable constitution, but it would be wise policy not to form new units before they can be adequately staffed and administered.

Regional Plan.—Earlier in this note reference has been made to the importance of regional plans, so a brief description of their nature and functions will be useful. So far only five have been written in the Punjab; each one deals with very dissimilar conditions. In general form they follow forest working plans; but in addition to treating the usual forest matters, they may deal with all or any of the following subjects, "Up-stream" engineering, torrent training, reclamation of water-logged areas, soil conservation measures in cultivation, diversion of low grade cultivation to forest, consolidation of holdings, co-operative management of village forest, rotational closures and grass-cutting schemes, etc. For in the systematic planning of soil conservation and water-flow control many aspects of village life are touched on, and thus it comes about that several departments of Government may be implicated. These plans deal with one complete watershed or catchment area with its water course; the largest dealt with so far is about 30,000 acres. Scores of these plans will have to be made many of which will be remarkably similar. The writers of the 5 plans mentioned above have, in their enthusiasm, made them too long; in future they will have to be much shorter; in fact they are not really regional plans, but watershed plans; the real regional plan should be of much wider scope and should cover the whole tract in which topographical features are more or less homogeneous. Thus the regional plan would correspond in form to a single-circle working plan divided into a number of series which would be the watershed plans. In this way most of the part I material would appear once in the regional plan, and not, as at present, in every watershed plan.

Development of Woodware and Cottage Industries.—The Punjab is deficient in good hard woods; the war has depleted stocks of good shisham timber trees and long logs are now almost unobtainable. High quality timber is rarely found growing naturally and future supplies will depend almost entirely on the efforts of the Forest Department. The irrigated plantations and the riverain forests alone can produce fine timber; the working plans are due for revision and future prescriptions will have to take this into account.

There are other species not really common in the Punjab, though they may have been at one time which should be of local value; for example *khair* (*Acacia catechu*), *simal* (*Bombax malabaricum*) and *toon* (*Cedrela toona*); they can be very easily grown, and their home is in the sub-montane tract where extensive afforestation schemes are being undertaken.

Willows, for basket making, can be grown in many parts of the Punjab, but no systematic attempt has been made so far.

Rope-making from grass is a widespread cottage industry, but primitive methods are used. The introduction of simple rope-winding machinery is an obvious development.

There are numerous possibilities, but the first essential is to produce the raw materials. There is some justice in the criticism that the Punjab has been unenterprising in the matter of trying out new species or fostering the spread of those which exist, but it is due partly to lack of opportunity. There can be no excuse now and in the future the Utilisation Conservator will be responsible for the development of wood-ware and cottage industries.

Note on Item No. 3 : Post-war plans by W. T. Hall, Chief Conservator of Forests, United Provinces.

The following Forest Department schemes have been submitted to the Post-war Reconstruction Board :—

- (a) Land Management.
- (b) Forest Rehabilitation (working plans and silviculture).
- (c) Utilisation.
- (d) Forest buildings and wells.
- (e) Communications.

2. *Reference (a) Land Management.*—The scheme deals with the management and improvement of private forests and waste lands, prevention of erosion and increase in fodder crops for cattle. The scheme envisages the establishment of fuel and fodder reserves in all plains districts of the Province and the establishment of plantations on railway land along road sides and canal banks.

It is proposed to develop two new circles in the first four years and finally the creation of a new Land Management Department in which officers of other departments will be represented, viz., Agriculture, Rural Development, Animal Husbandry, Irrigation. It is estimated that the scheme will cost about Rs. 41 lakhs in the first five years.

3. *Reference (b) Forest Rehabilitation.*—This scheme chiefly deals with the organisation required for revision of working plans as a result of heavy war felling. Complete revision of all working plans will be undertaken within 10 years but interim schemes for recalculation of the yield will be undertaken during the first two or three years. This will require an additional Conservator Working Plans, with the necessary staff.

4. *Reference (c) Utilisation.*—This scheme deals chiefly with the creation of a permanent Utilisation Circle to develop minor forest produce, to expand markets, deal with sleeper supplies and all forest utilisation in general.

5. *References (d) and (e).*—These schemes deal with plans for new buildings, wells and roads.

Item No. 4. Staff to carry out post-war forest plans and their training

BY
SIR HERBERT HOWARD, I.F.S., *Inspector General of Forests.*

The provision of the following staff to carry out the post-war forest policies of the various provinces (and States) has to be considered—

(a) Foresters and Deputy Rangers.

(b) Rangers.

(c) Gazetted officers.

2. Foresters and Deputy Rangers need not be further discussed. From enquiries made it is found that adequate provision for their training exists or is being made by the various provinces. My report on this to the Government of India was forwarded to Provincial Forest Departments on January 11, 1945.

3. The remarks here on provision for training rangers and gazetted officers are entirely on such points as the necessary numbers needed annually, and how to provide Instructors and Assistant Instructors, buildings, etc., to cope with those numbers. They have nothing to do with subjects to be taught or methods of education which points may very likely be discussed under a later item of the agenda.

4. The basic problem is the same for both rangers and gazetted officers namely the numbers required annually and how to provide for them. But there are two sets of numbers. The first is what is the real demand which will be required when the post-war plans are more or less complete. Such a figure can only be approximate, but it is necessary to have this approximate figure. Having obtained this figure, it has to be modified by reducing it for the percentage likely to be filled by promotion from below (luckily this gives some elasticity) and this proportion may differ somewhat in different provinces. At any rate there will eventually emerge a final figure which, divided by the average service life of the officer, gives the average annual demand for seats—let us say "X".

5. But if men are only trained at this rate, post-war expansion will be very slow to say nothing of the extra recruitment necessary to make up for short recruitment during the war. Almost all provinces will want to train faster than the figure "X".

6. An actual rate of annual training must therefore be decided. This will give a final figure "Y", a good deal greater than "X", especially for rangers. There are, however, dangers in making "Y" too large. For example the many difficulties introduced from an unbalanced cadre, the fact that if recruitment goes much quicker than work (and especially planting and afforestation) all the troubles of excessive staff with little to do will reappear in a few years, the fact that capacity for expansion of work is not only dependent on trained staff but is also limited by available labour, funds, etc.

Moreover the bigger "Y" becomes the more forest officers as teaching staff are required. This is always a difficulty and at present a very real difficulty. At the time of writing this, the end of February, the staff necessary to open on April 1st is still short by one Instructor, it contains men already past retiring age, and it has been necessary to take whatever was offered there was no choice whatever.

Thus, though "Y" will certainly be greater than "X", it will be a difficult point for this conference to decide how much greater.

7. It must not be forgotten that in calculating both "X" and "Y" an allowance must be made for States. I think the State demand can be put at 40 per cent. to 50 per cent. of the provincial demand for Rangers and about 20 per cent. for gazetted officers.

8. It will not be economic to put up *new* buildings to accommodate more than "X". If buildings were put up to accommodate "Y", there would be no use for many of them after a few years, as the normal final demand is only "X".

9. How then can be yearly extra normal demand "Y-X", be trained without waste of money and buildings.

Rangers.—The New Forest buildings just put up can take 36 annually—too big a class for efficiency but that is the maximum capacity. The old Ranger College in Dehra Dun can take 39 annually—a total of 75. There are buildings at Coimbatore which can take, I understand, about 30 annually. Here then is a large total "buffer", because the buildings in Dehra Dun can certainly be disposed of. If "X" is more than 36, it will then pay to build for a larger class at the New Forest (or Coimbatore).

I have already suggested elsewhere that Coimbatore might well be reopened as part of the Government of India forest education establishment and possibly even that each class should do its first year at Dehra Dun or Coimbatore and then move complete with its instructors to the other centre for its second year—a much cheaper and more efficient arrangement than merely taking a ranger class on tour to South India or *vice versa*. At any rate it is worth discussion.

It appears at any rate that there is sufficient buffer to allow for training first "Y" and then "X" for rangers without material difficulty or loss of money, though teaching staff will be a difficulty.

Gazetted officers.—Exactly the same principles apply, but there is not quite the same elastic buffer. The present buildings will accommodate 30 one year and 24 the next. This is quite temporary and the present proposed aim is to build for 24 and 24, i.e., 24 as a yearly maximum, though a class of 20 is probably the best for maximum efficiency.

India naturally wants to train the majority of its officers in India, that is the whole aim of Dehra Dun. But again it only pays to build for the final "X" for gazetted officers.

For a few years there will certainly be a "Y" greater than "X" for gazetted officers and this difference "Y-X" has still to be trained. Fortunately a buffer again exists as arrangements have already been made to train this difference at Edinburgh—a scheme the provinces know about and have approved.

10. The question before the conference therefore is to decide what these numbers are or rather to make some decision about "X" and then decide in debate what is the best figure to adopt for "Y" taking the various factors into consideration.

Item 4. Staff to carry out post-war forest plans and their training.

(Note.—By Mr. W. C. de C. Walsh.) Utilisation Conservator of Forests, Province of Bombay.

The staff required by the Land Improvement Section for the two Agricultural Department Schemes mentioned under Item 3 is to be obtained.

(i) by the Director of Agriculture by selection of suitable Agricultural Subordinates (Overseas) for the posts of Rangers, (the Chief Conservator of Forests to arrange for their training in Silviculture and

(ii) by the Director of Agriculture by selection of suitable candidates for the posts of Foresters and Guards—the training necessary for these selected candidates still to be decided.

The estimate of the staff required for the execution of the 4 Forest Department Schemes mentioned in item 3 is :—

Name of post.	Total No. of posts.	Pay scale.
Administrative post		
Conservator of Forests Working Plans Circle ..	1	Rs. 1,750—100—2,150 + £13-6-8 O. S. P.
Class I.		
1 Divisional Forest Officer, Working Plans, N. C..	3	Rs. 300—20—420—T. B.—30—660— E. B.—40—300.
1 Divisional Forest Officer Ahmednagar Division		
1 Divisional Forest Officer, Ratnagiri Division ..		
Class II		
3 Assistants to Divisional Forest Officers, Working Plans, N. C. and S. Circles.	6	Rs. 235—15—400—20—500
3 Assistants to Divisional Forest Officers, Poona, Satara and Nashik.		
Subordinate staff.		
Rangers	18	Rs. 80—5—125—T. B.—130—5—150
Ranger Surveyors	2	Do.
Forest Surveyor	1	Rs. 67—5/2—75.
Forest Surveyors	3	Rs. 25—5/2—35.
Foresters	12	Rs. 30—1—40
Forest Guards	10	Rs. 25.
Forest Guards	50	Rs. 15—1—22—20.

Clerical establishment.

Not enumerated here.

The staff for the two new Divisions (of Ahmednagar and Ratnagiri) to be created is to be obtained from the extra appointments made for War-supply—as soon as war Supply is over or curtailed and by further recruitment to fill vacancies in the Bombay Forest Service Class II caused by retirement during the next five years.—

(a) by promotion of selected Rangers and

(b) by direct recruitment for training at Dehra Dun.

An estimate of the total period required for the completion of post-war forest plans is from 10 to 15 years. We have not yet been able to work out what total final cadre we will require at the end of the 15 year period but have estimated the total cadre required for the first 5 year period which is :—

Categories	Present position		Postwar position		Wage during next 5 years	Remarks
	Permanent	Temporary (due to war)	Permanent	Temporary (due to postwar scheme)		
Foresters	484	Net known 32	494	16	100*	*Based on life of 25 years
Rangers	137		137	20	12†	†Based on actual time.
B.F.S. Class I & II.	70	15	39	10	15†	

Training.

Foresters :—There are 2 classes in this province one at Mandvi in the Northern Circle and the other at Halyal in the Southern Circle. This class is held for a continuous term of 6 months—16th October to 15th April—and about 25 candidates are trained in the former and 12 candidates in the latter. If necessary the number of trainees could be doubled by having 2 terms per year instead of one at present. The Land Improvement section has organised a special Forestry section at the Bunding Training Centre, Bijapur for training 20 Foresters and Guards annually for work in the Forestry section of the Land Improvement Section of the Agricultural Department.

Rangers :—4 candidates are at present undergoing training at Dehra Dun for the 1944-46 course and 7 candidates have been selected for the 1945-47 course. It is proposed to send 10 candidates for the 1946-48 course and 9 for the 1947-49 course. We shall thus have 30 trained Rangers by 31-3-1949 to fill 30 vacancies (12 due to retirements and 18 created for the postwar Schemes).

B.F.S. :—5 candidates have already been selected. Of these 2 are to be sent to Edinburgh for training. The course which is of 3 years duration will start on 1st October 1945. The remaining 3 are to be sent to Dehra Dun for the 1945-47 course.

It is proposed to send 3 candidates to Dehra Dun for the 1946-48 course and 3 for the 1947-49 course.

Thus we shall have eleven trained men for direct recruitment for B.F.S. Class II.

If 2 more candidates are sent to Edinburgh for the course which will commence on 1st October 1946 we shall have 13 trained men by 31-12-1949.

The total posts to be filled upto 31-12-1949 are estimated at 25 (10 for postwar Schemes and 15 due to retirements and e.) and if 13 trained men are available the remaining 12 could be filled by appointment of Rangers who already hold temporary posts in Class II.

Selection of direct recruits for the Bombay Forest Service Course (For Class II only), since July 1937.

BY

W. C. De C. WALSH, Esq., *Utilisation Conservator of Forests, Province of Bombay.*

Year of selection.	Period of course.	No. of candidates.	
1937	1938-40	2	
1941	1942-44	4	
	Total	6	
1945	1945-47	3	for Dehra Dun.
1945	1945-48	2	for Edinburgh.
1945	1946-48	3	for Dehra Dun.
1948	1947-49	3	Do.
	Total	11	

Selection made.

Proposed selection.

No. of Rangers promoted to B. F. S. Class II since the War .. 23

In addition 2 Rangers have been promoted and sent to the Land Improvement Section of the Agricultural Department.

Divisions held by promoted Rangers .. 8 (including Mr. Linway).

Item No. 5. Minimum educational qualifications prescribed for the Rangers and the Superior Forest Service Courses.

BY

SIR HERBERT HOWARD, I.F.S., *Inspector General of Forests.*

Provinces at various times have shown that they consider the minimum standards too high for entrance to the two colleges. Provinces have even called for applications with lower qualifications than those laid down and stated them as acceptable for their services. It is true that the President has the power to waive the entrance qualifications, but it was certainly never intended that he should use this power to waive a whole set of candidates for a province who advertised for entrance of a lower standard than the minimum laid down by the colleges. If the President refused to exercise his discretion a deadlock would be created. For practical purposes therefore it reduces to an absurdity the standards laid down for entrance to the Dehra Dun colleges if provinces are going to state publicly that they are prepared to accept a lower standard. If that is to happen then it appears better to lower the prescribed qualifications for entry to Dehra Dun to fit in with the wishes of provinces. There are objections to having one standard for one province and another standard for another province because to a great extent teaching and progress depend on the lowest, unless the lowest are left to make the best they can of the teaching with the very probable result of a large percentage of failures in the final exams.

2. The present qualifications are—

For Rangers—

A certificate of having passed the Intermediate examination of any recognised Indian university with one or more of the following subjects :—Mathematics, Physics, Chemistry, Botany, Zoology.

A certification of having passed any other examination of an equivalent or higher standard will be admissible.

In addition to the above, before admission to the college, every candidate shall be required to pass a qualifying examination in the following subjects :—

- (1) Dictation of a piece of ordinary English prose.
- (2) An essay to be written in English on one of several simple subjects.
- (3) Mathematics (Arithmetic, Geometry and Algebra). The standard of this paper will be that of matriculation.
- (4) General knowledge. This will include elementary science, geography and current events.

Twenty per cent. of the marks allotted for Dictation will be given for handwriting.

In order to qualify, a candidate must obtain at least 50 per cent. of the marks in each subject.

For gazetted officers.

(a) A B.Sc. (Honours) degree, not lower than 2nd class, or its equivalent, in any natural science or in mathematics or in agriculture, or

(b) A B.Sc. (Agriculture) degree, without honours, provided a 1st class was obtained, or

(c) An M.Sc. degree, of any class, in any natural science, mathematics or agriculture, provided that the B.Sc. degree was not lower than 2nd class, or

(d) Qualifications from a foreign University, accepted by the Government of India as equivalent to the above.

3 It would perhaps be out of place for me to express any very definite opinion on such a matter on the eve of my departure. So far as Rangers are concerned, the facts are that the standard has only very recently been raised to Intermediate and I am sure you will all agree that the standard of Rangers we obtained before the change was a very excellent standard. It should not be forgotten that the Ranger, possibly even more than the gazetted officer, needs to be a man with a knowledge of and a sympathy for the land and what it produces. Other things being equal, he should preferably be drawn from countrymen rather than townsmen.

4. For gazetted officers the position is a little different. The standards in existence at present are, with slight modifications, the standards laid down when the college started in 1938. So far as I can

ascertain, though I have not yet received a final reply, they are roughly the standards that would be demanded at a University like Edinburgh to excuse the first year's work for a forestry degree, i.e., the pure science part, and thus enable the degree to be completed in two years which is the exact length of the course at Dehra Dun. To lower the standard below that demanded elsewhere might have the effect of lowering the general prestige of the forestry training for gazetted officers in India. On the other hand, there is a definite school of thought which considers it preferable to start men on forestry before the higher degree stage and lengthen the forest course accordingly. That was really the system as Coopers Hill and up to my own year at Oxford, though in fact most Oxford men took a science degree in addition to the forestry diploma. But the other side of the picture is that gazetted officers should also be drawn from a class with a sympathy and liking for the countryside rather than the town. If a gazetted officer is to be of any real use in his profession he must be the type who is prepared to live in his jungle rather than in the nearest available town. It is the opinion of certain provinces that the present standard for entrance to the gazetted officers class is just too high and thereby keeps a large number of this very desirable class out of forestry.

5. That at any rate is a brief statement of the position and the debate of the conference will no doubt enable definite recommendations to be made one way or the other.

Item No. 5.—Minimum educational qualifications prescribed for the Rangers and the Superior Forest Service Course.

BY

W: C. De C. WALSH, Esqr., Utilisation Conservator of Forests, Province of Bombay.

Rangers.—The present standard 'Intermediate examination of any recognised Indian University with one or more of the following subjects :—

Chemistry, Mathematics, Physics, Botany and Zoology or any other examination of an equivalent or higher standard—prescribed for Rangers Course should not be lowered. Given Rangers of the right standard probably 50 per cent. of the posts in Bombay Forest Service Class II of this Province may be filled by the promotion of trained Rangers. In view of this and also of the present low standard of the Matriculation examination the present standard should remain.

What is needed is an increase of the scales of pay of Rangers to attract better men.

The following scales might be suitable as a basis for discussion.

I grade (12 posts)—Rs. 250.

II grade (125 posts)—Rs. 100—5—150—E.B.—10—200.

Note.—The present scales are :—

I grade (12 posts)—Rs. 200.

II grade (21 posts)—Rs. 175.

III grade (104 posts)—Rs. 80—5—125—E.B.—5—150.

Superior Forest Service :—Formerly the qualification for the Superior Forest Service Course was an honours degree in Science or similar high distinction of a recognised University. In the case of University of Bombay "an Honours degree in Science" was interpreted to mean either of the following :—

(i) B.A. with first class honours in either—

(a) Physics and Chemistry, or

(b) Botany and Zoology,

or

(ii) B.Sc. in First Class.

"An Honours degree in Science" now means—

(i) B.A. with First or Second Class honours in the subjects noted above.—

or

(ii) B.Sc. in First or Second Class.

As candidates selected for the Superior Forest Service Course are eventually promoted to class I and also to administrative post it is not desirable to lower the qualifications any further. With the help given by Government at present we are getting a large number of candidates with the necessary qualifications.

In the case of candidates sent to Edinburgh the Government of India have agreed to meet 50 per cent. of the cost of the trainees selected and despatched during the war and six months thereafter and the Bombay Government have agreed to bear the other 50 per cent.

In the case of candidates to be sent to Dehra Dun from 1945-46 until the end of the war and six months thereafter the Government of Bombay have agreed to bear the following expenses of training of each candidate :—

Rs. 3,500 per annum as contribution towards the tuition fee.

Rs. 100 p.m. for boarding and lodging expenses.

Travelling expenses upto a maximum of Rs. 500 per annum.

Item No. 6—The creation of a Central Federal Forest Service.

BY

MR. J. W. NICHOLSON, C.I.E., I.F.S., *Conservator of Forests, Orissa.*

The difficulties in the constitution of an independent Federal Forest Service are obvious. The cadre would necessarily be very small one. Many of the all-India posts require special qualifications and it is unlikely that suitable incumbents would always be available from within the narrow confines of the Federal cadre. If, on the other hand, the Federal Service comprised men selected from and permanently seconded from the Provincial Services there is a danger, which past experience has proved to be a real one, that such men may, through over long service in specialised posts, lose touch with the realities of day to day forest administration.

The old system under which men were temporarily lent from the Provinces and each province included provisions in its cadre for a certain number of all-India posts appears to have worked satisfactorily enough until the depression of the thirties. Some of the Government of India posts were retrenched and at the same time some provinces went in for cadre retrenchments. Partly due to such retrenchment and partly due to uneven distribution of all-India posts amongst the provinces some of the latter, notably Madras, were left holding the baby, quite naturally provinces can now scarcely be keen to include in their cadres provision for all-India posts when there is no certainty that the Government of India will indent on them for men. War time expansion of activities has followed closely on pre-war unwise retrenchment and the Government of India is naturally the biggest sufferer as provinces have first claim on their own men.

I suggest that the old system of recruitment to Government of India posts should be continued with and that these posts in the aggregate should comprise a Federal Forest Service. Provinces, in proportion to the strength of their cadres, should be asked to make provision for a certain number of Federal posts. In return the Government of India would give a guarantee that, if a post allotted to a province was not filled thereby leaving that province with a supernumerary post, they would recompense that province by a contribution equal to the average salary of Forest Officers in their service, plus a leave and pension contribution for same. I feel sure that provinces would co-operate as they would stand to lose nothing by accepting such a scheme: on the other hand and efficient well staffed Federal Service will be for the good of every province. I would also include Indian States in the scheme if any of them have a large enough cadre to justify allocation to them of one or more Federal posts. The only apparent draw-back to this scheme is that a niggardly Government of India might, to save money, decline to appoint the best men available.

It might be suggested that provinces should reciprocate by a Reverse Lease Lend scheme under which, the Government of India at any time recruited from a Province more than its due number of Federal posts, that Province would pay the Government of India a contribution similar to that proposed above in the case of contributions to provinces. Theoretically this suggestion is fair but it is unlikely to prove popular with provinces. The Government of India has more financial resources at its disposal than any province and it can afford to be generous.

I would also repeat a proposal I made some years ago, and that is that recruitment to the Federal Service should be confined to Provincial Forest Officers who have taken a post Graduate course of training at the Imperial Forestry Institute, Oxford. Provinces are likely to be stimulated thereby to send selected Officers for such training while it will ensure that the Federal Forest Service will be a Corps d'elite.

Needless to say the pay and allowances of the Federal Service should be such as to attract the best men available. That is not the case at present.

NOTE ON ITEM No. 7(A):

'Application of the next-below rule to all forest officers, seconded to Dchra Dun'.

BY

C. E. SIMMONS, I.F.S. (Retd.), *President, Forest Research Institute and Colleges, Dchra Dun.*

Fundamental Rule 30 deals with officiating promotion and lays down the principle that a Government servant, who is appointed to officiate in a post, shall not draw higher pay than his substantive pay, unless his officiating appointment involves the assumption of duties and responsibilities of greater importance than those attached to his permanent post.

There is, however, a proviso to the rule, which gives power to the Governor General in Council to specify posts, outside the ordinary line of service, the holders of which may be given officiating promotion, notwithstanding the general principle laid down in F.R. 30.

The proviso is known as 'the next-below rule' and correction slip No. 580 to F.R. 30 deals with the guiding principle for the working of this rule, the intention of which is that an officer out of his ordinary line of service should not suffer by forfeiting acting promotion, which he would otherwise have received, had he remained in his regular line.

Once the Governor-General in Council has specified certain posts to which the next-below rule can be applied no further reference to him is necessary and in so far as the Forest Research Institute and Colleges is concerned Government of India could apply the rule at their discretion, in the case of the listed posts.

2. Action has been taken to specify five posts at the Forest Research Institute to which the Government of India may apply the next-below rule in so far as appointment to the class of Conservator of Forests, either officiating or substantive, can be applied, vide Article 20-A of Forest Department Code. The five posts are described as Imperial Posts, which were formerly reserved for the appointment of officers of the I.F.S. They are:—

- (1) Forest Botanist,
- (2) Forest Economist, now called the Utilisation Officer,
- (3) Silviculturist;
- (4) Forest Zoologist, now called the Forest Entomologist,
- (5) Forest Chemist, now called the Bio-Chemist.

3. It will be observed that Article 20-A is limited in scope in two directions (a) to appointment to the class of Conservator and (b) to five specified-research posts.

It is inapplicable to the following classes of promotion—

- (a) promotion to the grade of Chief Conservator,
- (b) promotion from the P.F.S. (Old) to P.F.S. Class I (New),
- (c) promotion from P.F.S. (New) Class II to Class I.

It is also inapplicable to the promotion of an officer of a provincial service, holding an appointment as Forest Botanist for example, to the grade of Conservator.

4. It is unnecessary to stress the importance of obtaining the right type of officer at the Forest Research Institute and Colleges, for those posts, which must be held by forest officers, whether they are on the research side or at one of the colleges, and to retain their services for some years. Without this the efficiency of the Forest Research Institute and Colleges must suffer and the liaison with provinces cannot be adequately obtained.

5. The Senior Officers' Conference is asked to consider whether there should not be a general ruling to prevent an officer losing by going to Dehra Dun.

There is in fact a general ruling in the proviso to F.R. 30, but the difficulty arises from the fact that except in so far as appointments to the class of Conservator of Forests in respect of the five posts specified in Article 20-A, are concerned, each case must be considered on its merits by the Governor General in Council.

The issue appears therefore to be the amendment of Article 20-A of the F.D. Code, with a view to expanding its scope, both as regards posts and classes of promotion, and its extension to services other than the I.P.S. If it is agreed that this article should be amended, and Government of India accepts a recommendation to this effect, it will eventually be necessary to specify the posts with the object of moving the Governor General in Council to exercise his powers under the proviso to F.R. 30. This is a matter of drafting.

What is for the consideration of the Conference is the extent to which it is considered desirable to extend the scope of Article 20-A of the F.D. Code.

6. There are two classes of promotion, namely to the grades of Chief Conservator and Conservator of Forests, which have special features in that service, whether officiating or substantive, in such posts carries additional pension.

In respect of appointments, carrying additional pension, in particular there is one point of considerable importance, namely the period of a vacancy in a province to which a forest officer might have been appointed, had he been in his regular line of service.

Even short vacancies are relevant to the point at issue, because of their cumulative effect on service for additional pension.

Cases may and do occur in a province where a short leave vacancy in the Conservator's grade is followed immediately or shortly afterwards by the grant of leave to a second Conservator, with the result that an officer at the Forest Research Institute and Colleges, whose services it is considered necessary to retain, may be severely penalised, unless the amendment to Article 20-A provides for this contingency.

The same applies though to a lesser degree in respect of the loss of promotion in other directions, for which the next-below rule was devised.

Item No. 8.—To consider the possibilities of providing a graduated course from the Forest School to the Indian Forest College.

NOTE BY THE INSPECTOR-GENERAL OF FORESTS.

It has been suggested that the Indian Forest Ranger College should be known as the Forest School and that its course should be so arranged that it is a direct preparatory training which could fit in with the higher training of the Indian Forest College so that, where desirable, the whole could become one continuous course from start to finish. At the same time the course should be sufficiently general in character to permit of students at the end of it passing on to agriculture or to private forest employment of the timber business. It should not be merely a passport to the forest services of Government.

It has also been proposed that in order to inculcate a love of fields and forestry in those who will eventually become forest officers, admission to the School should be at much younger age than at present, perhaps to the extent of accepting men who have passed matriculation standard instead of Intermediate standard as at present. They should then be trained both practically and scientifically to equip them as Rangers, if they went into service on leaving the Forest School, but enabling them to go on to the Indian Forest College and leave there finally with the diploma in forestry and with the right to use the letter A.I.F.C. (Associate of the Indian Forest College), this being the equivalent of degree status.

Entry to the Forest College, i.e., the gazetted officers college, would be by competitive examination and those admitted to this competitive examination would be (a) students from the Forest School who had completed the course, (b) Provincial and State nominees of the minimum University qualifications as laid down at present and (c) the exam. for admission to be open to ordinary private students as at present when seats are available.

Certain obvious advantages in his method are that a boy taught forestry from the matriculation stage first through the Ranger course and then through the gazetted officers course should be a highly qualified officer with an almost exclusive interest in his own profession. Certain obvious disadvantages are the length of the full course; the difficulty of persuading the right standard of student to enter forestry at the Ranger stage with no certainty of attaining the higher college; the increase in the length of the course for such students with the consequent increase in expense, accommodation and teaching staff required, etc.; the possible difficulty of provincial nominees for Rangers passing on to the higher college and so leaving provinces short; and the further difficulty of direct provincial nominees failing to pass high enough in the competitive exam. to enter the college.

No doubt the conference will have further *pros* and *cons* to suggest and it is to get the fullest expression of opinion that this item of the agenda has been put forward.

Item No. 9.—Legislation necessary for the control of private forests.

BY

W. T. HALL, C.I.E., I.F.S., *Chief Conservator of Forests, United Provinces.*

1. *General.*—In connection with post-war reconstruction schemes I have no doubt that many Provinces will be considering some form of control over private forest land. To what extent should we exercise control? What is the nature of the legislation necessary? The United Provinces would value discussion on these and other relevant questions and the object of this Note is not to suggest a solution but to provoke such discussion.

2. *Position in Europe and U.S.A.*—As we all know the communal forests in several European countries have long been subject to State control. In Soviet Russia private ownership of forest land disappeared with other forms of private ownership. I believe that under the Nazi regime in Germany State control of the management of private forests was so strict and extensive as to make them practically State forests. Compulsory expropriation of private woodlands was resorted to in Czechoslovakia and the Baltic states. In the U.S.A. the Weeks Act of 1911 saw a reversal of the policy which accounted for 80 per cent. of the forest area being under private ownership and the Copeland Report of 1933 recommended acquisition by the State of 134 million acres.

Great Britain has one of the lowest proportions of its land under forest in Europe and 86.4 per cent. of the total forest area was under private ownership in 1937. Is it a consequence that scientific forest management in the past has largely been a by-word in Great Britain? I believe there is a proposal for a Dedication Scheme under which owners may dedicate their woodlands for timber production under State control with a state subsidy and that undedicated woodlands should be acquired by the State.

3. *Position in India.*—The general position in India has in some provinces been worse than in Great Britain. Even before War it was not uncommon for large areas of forest to be clear-felled and no steps taken to replant them or to tend to spontaneous growth and coppice. As a result of the war, with the consequent high prices for timber and fuel, there has been an enormous increase in the destruction of groves and Zamindari woodlands.

In almost every province there has been no legislation to prevent such destruction and little or no statutory control over management.

4. *State control in India.*—There may be differences of opinion on the question of Private V. State Ownership but amongst liberal minded people there will be no difference of opinion that some form of State control of forest lands is necessary, at least to prevent the worst forms of abuse. I have no hesitation in saying that, in my opinion, all forest lands should be owned by the State and failing this that their management should be under the partial control of the State.

In the United Provinces the Tenancy Act of 1939 caused bitter controversy and any proposal to change the system of land tenure would be received with grave suspicion and opposition. As a policy for the immediate future the question of State ownership and acquisition on a very large scale can be dismissed on the grounds of expense alone but I am strongly in favour of acquisition to the fullest extent possible particularly where erosion is a grave menace as in the Jamna and Chambal ravines.

5. *The Indian Forest Act.*—Chapter V deals with the control of Forest and Lands which are not the property of Government. These provisions are entirely inadequate and in any case this Chapter has for all practical purposes been a dead letter because of Section 37(2) under which the owner may compel the Local Government to acquire such forest or land comprised in any notification under Section 35.

6. *New Legislation.*—It is obvious that fresh legislation is necessary to allow the State gradually to assume full or partial control of management over private forest land. It would not be possible to have legislation on the lines of the Forest Act applicable to the whole of India. In fact it is probably essential to have different provisions to suit local conditions but discussion on general principles and what we should aim at would be valuable.

We already have something to go on, e.g.—

- (a) The Stephenson Report of 1909.
- (b) Report of the West Bengal Forest Committee and the Bengal Private Forests Bill of 1939.
- (c) Chota Nagpur Private Forests Bill of 1939.
- (d) Punjab Land Preservation (Chos) Amendment Act of 1942.
- (e) Bombay Act No. XXVIII of 1942.

Perhaps the delegates from these Provinces would favour the conference with information on above bills.

Item No. 10.—Grant of premia to forest subordinates doing extra war supply work.

BY

MR. J. W. NICHOLSON, C.I.E., I.F.S., *Conservator of Forests, Orissa.*

At a conference of Divisional Forest Officers held last July it was their unanimous opinion that something should be done to recompense members of the forest subordinate field and clerical establishments who had had heavy additional work to do over war supplies. Most provinces and the Government of India have constituted new departments to cope with war problems such as supply, and officers appointed to those new departments usually enjoy extra pay. In Orissa, and probably in all other provinces, heavy extra supply work has had to be done by the

members of the existing forest staff without additional remuneration. Police service subordinates have been given extra pay on account of extra war time responsibilities and there seems every justification in favour of subordinate forest officers being given extra pay. I wrote round to provinces enquiring whether any such recompense was being given. Replies were to the effect that except in special circumstances no extra remuneration was being given. Some thought that something should be done in the matter. I worked out a scheme whereby the premia to be paid should be based on tonnage supplied by each division and by each range of a division, and distributed on a percentage of pay basis. The scheme was circulated to Divisional Forest Officers but not one of them accepted it in its entirety. They all had their own suggestions to make some of which were impracticable. I felt that there was no hope of getting Government to agree to any payments of premia unless a sound and fair system of distribution could be worked out which did not leave it to the judgement of Divisional Forest Officer to make allocations on an invidious individual selective basis. I have therefore taken no further action. If the majority of provincial representatives are in agreement that forest subordinates do deserve premia it might help in getting Provincial Governments to agree to payments of same if the conference passed a resolution on the subject. Practical suggestions regarding basis of distribution would be welcome.